Participant Workbook

TAEDES502A Design and develop learning resources

Part of a suite of support materials for the
TAE10 Training and Education Training Package

IBSA
Innovation & Business Skills Australia

Acknowledgement

Copyright Statement

Disclaimer

Table of contents

Appendices

Welcome

Introduction

This Participant Workbook supports *TAEDES502A Design and develop learning resources*, which is an elective unit in:

- *TAE50111 Diploma of Vocational Education and Training*
- *TAE70111 Vocational Graduate Certificate of Language, Literacy and Numeracy Practice.*

It is a core unit in *TAE50211 Diploma in Training Design and Development*, and can also be delivered and assessed as a stand-alone unit.

This unit specifies the skills and knowledge required to design and develop learning resources. It will help you develop skills and knowledge to:

- identify what is needed through analysis, research and consultation
- design and develop learning resources which meet the needs of the end-user
- review or pilot a draft resource
- evaluate the design and development processes.

Learning resources are developed to help people to learn specific knowledge and skills. They can take a variety of forms such as facilitation guides, learning guides, participative resources, assessment materials or workplace resources. They may be self-paced or used in a context where there is a teacher or trainer.

This workbook is mainly about print-based resources, but what you will learn can also be used in the development of resources in other media such as audio or video, as the underpinning instructional design skills and knowledge are mostly the same.

This Participant Workbook is based on the Learner Guide developed for *TAADES502A* on behalf of the former Business Skills Training Australia (BSTA) by the Kangan Batman TAFE Learning, Research and Design team.

Note: The design and development of e-based learning resources is separately addressed in the unit *TAEDES503A Design and develop e-learning resources.*

Sections in this workbook

This Participant Workbook consists of the following sections.

Learning

This section provides background information to support this unit of competency, and advice on where to go for further information.

Throughout this workbook, you will notice small text included at the sides of some pages which provides advice on the best time to carry out a learning activity. The activities referred to in these side notes are included in the Application section of the workbook.

Research tasks

Throughout the Learning section of this workbook you will find research tasks for you to complete. These tasks are designed to help you to consolidate your learning.

Application

This section provides activities to help you apply the content of this unit. Your facilitator may also provide extra activities to support your learning as you are working through this unit.

Note that you may be assessed on some of these activities. Your facilitator will provide advice on which activities contribute towards assessment.

Appendices

This section provides reading material linked to the learning topics. Your facilitator may lead discussions around some of these or you may use them as you work through the activities.

Using this workbook

References

Throughout the Participant Workbook you will be directed to websites for additional information. Given that web addresses can change you may need to check the link and use search tools to find updated links.

Glossary

Innovation and Business Skills Australia (IBSA) maintains an extensive glossary of VET terms. You can access it online to clarify the meaning of terms used in this workbook. *<http://www.ibsa.org.au/Portals/ibsa.org.au/docs/hosted%20documents/tae10%20learner%20resources/Glossary.pdf>.*

Context

To complete this unit you need a learning and assessment environment where you can access information and apply your skills. This environment is called the *practice environment*.

If you are already employed in an organisation that delivers training and/or assessment, your workplace will most likely be your practice environment. If not, your facilitator can help to find you a suitable practice environment.

If you do not have direct access to a practice environment your facilitator may need to help you by providing simulations or case studies that meet the assessment requirements for this unit. Throughout this workbook these environments will be referred to as your *practice environment*.

Compiling your own resources

As you use this workbook, compile a Resource Kit (electronic or paper-based) to use for your work and assist with your learning. This could include, for example, information that you print out or 'bookmark' from websites, resources you download, newspaper articles about your industry, or specific policies or procedures.

What you decide to put in your Resource Kit is up to you. Over time, it can become your resource companion containing information about current work practice and ideas.

The Resource Kit is for your own professional development and is different to any portfolio or file that you might keep for assessment purposes, although some resources may be included in both.

Recommended resources

Essential resources:

- Australian Qualifications Framework Council, 2011, *Australian Qualifications Framework (AQF),* 1st edn, Australian Qualifications Framework Council, Adelaide, viewed August 2012, *<http://www.aqf.edu.au/Portals/0/Documents/Handbook/AustQuals%20FrmwrkF irstEditionJuly2011_FINAL.pdf>.*

- Australian Copyright Council's information sheets, 2012, *Australian Copyright Council,* viewed August 2012, *<http://www.copyright.org.au/find-an-answer/>.*

- Commonwealth of Australia, 2002, *Style manual: For authors, editors and printers*, 6th edn, John Wiley and Sons Australia Ltd, Canberra.

- Department of Education, Employment and Workplace Relations (DEEWR), 2008, *Australian Core Skills Framework: A summary,* Australian Core Skills Framework (ACSF), Canberra, available online at: *Department of Industry, Innovation, Science, Research, and Tertiary Education,* viewed August 2012, *<http://www.deewr.gov.au/Skills/Programs/LitandNum/WorkplaceEnglishLangua geandLiteracy/Documents/ACSFsummaryfinaltoprint2.pdf>.*

- Universal Design Principles Checklist, available online at 'Resources and tools', *Queensland Department of Education, Training and Employment,* viewed August 2012, *<http://training.qld.gov.au/information/equity-diversity/resources-tools/>.*

Other resources:

- Kirkpatrick, D. L. and Kirkpatrick J. D., 2006, *Evaluating training programs: the four levels*, 3rd edn, Berrett-Koehler Publishers, San Francisco.

- Kirkpatrick, D., 2008, *Seven keys to unlock the four levels of evaluation*, available online at: *Scribd,* viewed August 2012, *<http://www.scribd.com/doc/7841600/ Donald-Kirkpatrick-7-Keys-to-Unlock-4-Levels-of-Evaluation>.*

Your assessment for this unit

To demonstrate competence in this unit, you must be able to provide evidence that you meet the requirements of the unit of competency. This includes evidence that you have acquired the skills and knowledge to design and develop learning resources.

You will need to provide specific evidence to show that you have the skills and knowledge to:

- research the requirements of the learning resource

- plan and design a print-based resource

- develop the content of the resource

- review the resource before implementation

- evaluate the processes used.

Assessment must include evidence that you have contributed to the design and development of two learning resources that reflect client needs and the contexts of application, and that you have developed one complete resource, including trialling it and evaluating the processes used in development. The evidence that you provide to show competency should be gathered in the workplace or, where no workplace is available, through a simulated workplace.

This unit might be assessed individually or together with other units in the *TAE50211 Diploma of Training Design and Development*, the *TAE50111 Diploma of Vocational Education and Training*, or the *TAE70111 Vocational Graduate Certificate in Adult Language, Literacy and Numeracy Practice*.

Negotiating assessment

You and your assessor should negotiate how you will show appropriate and sufficient evidence to demonstrate competence, reflecting the scope of the role as indicated in all components of this unit.

Completion of the suggested activities in this Participant Workbook will contribute towards your assessment. However, they are not necessarily the total assessment requirements for this unit.

Learning

Topic 1: The Learning Resource and its Context

This topic provides an overview of learning resources, the skills and knowledge involved in instructional design and theories of adult learning. Knowledge of these concepts provides a foundation for developing a learning resource. Once this foundation is laid, the rest of the Participant Workbook will discuss stages of designing and developing a learning resource.

The overall framework

This Participant Workbook concentrates on the micro level of designing learning resources or materials to use with adult learners. Other learning design units in the *TAE10 Training and Education Training Package,* such as *TAEDES501A Design and develop learning strategies,* deal more with the macro level as shown in the following diagram.

```
                    ┌─────────────────────────────┐
                    │          Learners           │
                    └──────────────┬──────────────┘
                                   │
                    ┌──────────────▼──────────────┐
                    │      Training Package       │
                    ├──────────┬─────────┬────────┤
                    │  Design  │ Delivery│ Design │
                    └──────────┴────┬────┴────────┘
                                    │
                    ┌───────────────▼─────────────┐
                    │      Learning Strategy       │
                    │        (macro level)         │
                    └───────────────┬──────────────┘
              ┌────────────────┬────┴────────┬──────────────┐
        ┌─────▼─────┐    ┌─────▼─────┐  ┌─────▼─────┐
        │ Learning  │    │ Learning  │  │ Learning  │
        │ Program   │    │ Program   │  │ Program   │
        └─────┬─────┘    └───────────┘  └───────────┘
    ┌─────────┼───────────────┐
 ┌──▼─────┐ ┌─▼────────┐ ┌────▼─────┐
 │Bench-  │ │Learning  │ │Delivery  │
 │marks   │ │Materials │ │Plan      │
 └────────┘ └─┬────────┘ └──────────┘
              │
         ┌────▼────────┐
         │ Assessment  │
         │ Requirement │
         │   Tools     │
         └─────────────┘
```
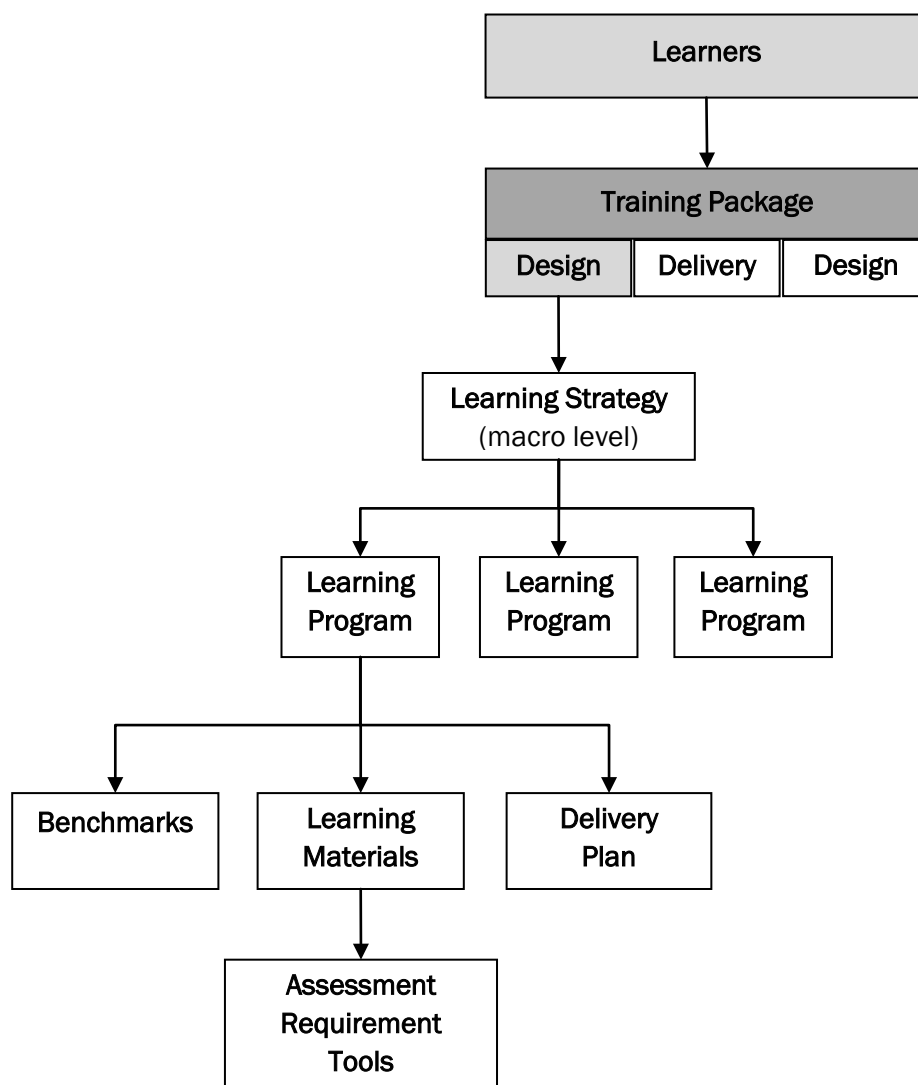
A *learning strategy* is a documented framework for the delivery and assessment of a vocational education and training (VET) qualification that:

- sets out the macro-level requirements for designing the learning process

- describes how a whole qualification or entire course of learning will be achieved.

A *learning program* forms a component part of the learning design structure for an educational qualification, and it can be a subset of a learning strategy. It identifies the benchmarks or competencies to be met through the learning process (that is, what has to be achieved by the learner), and then shows a breakdown of the range of learning experiences and methods of facilitation to meet these learning objectives. A learning program with clear learning outcomes or competencies is needed so that it is clear what type of learning resource needs to be developed to best support the learning process.

Types of learning resources

You may need to design a wide range of resources to support the learning programs you deliver. Examples of learning resources that you can design include the following:

- **Training resources** – resources to support the facilitator in delivering training, such as:
    - theoretical guides
    - class notes
    - self-guided learning programs
    - research and reading resources
    - case studies
    - step-by-step instructional processes for operating equipment
    - generic skills materials.

- **Participant resources** – resources to support the participant in their learning, such as:
    - forms
    - activity workbooks
    - questionnaires
    - learner guides.

- **Assessment materials –** materials to support the assessor in assessment of the learner, and materials to support the learner in undertaking assessment, such as:
  - assessment tasks
  - learning activities
  - discussion or research topics and questions.
- **Workplace resources –** resources to support learners' understanding of industry and workplace application, such as:
  - industry/enterprise-specific materials
  - guides for completing work tasks
  - descriptions of forms to be completed on the job
  - standard operating procedures
  - checklists
  - operational manuals
  - work health and safety (WHS)[1] procedures.

The materials that you develop may be minor or major documents. You may design them to be used in conjunction with existing resources, or you may need to design a completely new resource because no suitable existing material is available.

In the analysis phase, an important step in resource design is to determine the most appropriate medium for the learning situation. Should you be designing a print-based resource, or would other types of media be more suitable? For example, would an audio or video resource be more appropriate, or would an e-based learning resource better suit what is required? The needs of end-users, the client's perceived need, the budget and access to equipment are all factors affecting this decision. Video design, for example, requires professionals with specialised skills and equipment to produce a high-quality product; however, there may be time or budget restraints on this.

In most cases, the resources you will be designing and developing are likely to be for learners, but they could also be for facilitators, workplace supervisors or assessors. The resources you develop may cater for facilitator-led, classroom-based learning programs, or be self-paced for those learning on their own at home or in the workplace. Before the development stage you need to work out what type of resource would best support the specific learning context.

---

[1] *Previously referred to as occupational health and safety (OHS).*

> **Research task 1: Types of Resources**
>
> Carry out web-based research to find examples of the types of resources used to support learning in your specialist area.
>
> 1. What media is appropriate for your target audience, given the limitations and contexts in which the learning resources will be used? Consider the benefits and challenges that the use of a particular medium would present to your learners.
>
> 2. What learning program is the resource supporting? What are the learning outcomes of the program? (For example, the learning outcomes specified in a training package or accredited course units.)
>
> 3. At what Australian Qualifications Framework (AQF) level is the unit? What implications does this have for the level of content and writing style of the resource?
>
> 4. If you are developing an assessment resource, what instructions or advice will you include about the legal, organisational and ethical responsibilities of the assessment system?
>
> 5. What type of resource do you plan to develop?
>
> 6. Will it be used in conjunction with existing resources?
>
> 7. Will you be starting from scratch?
>
> Discuss your responses with colleagues.

Instructional design

The designer's skills

In this workbook you will be referred to as the *designer* of the resources. Other names for this role are: instructional designer, educational designer, facilitator, learning consultant, training officer or project officer.

To be competent in designing learning resources, whether it is a major or minor part of your job role, you will need the skills for performing specific tasks such as researching and analysing the requirements of the resource and designing its content.

You will also need to communicate well and use interpersonal skills. For example, when gathering information about your client's requirements you will need good communication skills to identify exactly what is needed. Listening and questioning skills are also very important. In addition you will need the skills to analyse all the information you gather so that you can work out the most appropriate strategy for learning.

It is also important to have the skills to write for the audience who will be using the resource. This means adjusting your writing style to a level that suits their likely reading level.

You will also need planning and problem-solving skills so that your work meets all requirements and deadlines.

The designer's knowledge

As the designer, you should have an overall framework, or 'big picture' approach so that you can develop and design the learning resource for the context and culture of a particular learning environment. You will need a working knowledge of the following:

- the main branches of learning theory, including behavioural learning theory, cognitive learning theory, experiential learning theory, information processing theory, as well as knowing about current research on learning as it relates to teaching in an adult environment (covered later in this topic)

- principles, theories and contemporary practices of instructional design (see Topic 2)

- language, literacy and numeracy (LLN) issues, such as:
    - requirements of the target audience
    - using the Australian Core Skills Framework (ACSF) as a framework to aid instructional design (see Topic 3)

- knowledge of the vocational education and training (VET) system, including:
    - relevant terminology
    - training packages and accredited courses (see this topic: Topic 1)
    - the Australian Qualifications Framework (AQF) (see this topic)
    - legal, organisational and ethical responsibilities associated with the Australian Quality Training Framework (AQTF)2 and the assessment system, such as:
        - maintaining client privacy and confidentiality
        - providing accurate information
        - duty of care under common law
        - compliance with VET regulatory bodies and requirements.

- copyright and privacy laws, including the use of electronic technology (see Topic 6).

2 Note that in some jurisdictions the AQTF has been replaced by the VET Quality Framework and regulation of these standards is performed by the Australian Skills Quality Authority (ASQA). While all the new standards and requirements under the VET Quality Framework are consistent with those that have previously existed, there are some small changes, for example, some new terminology is introduced. See <*http://www.asqa.gov.au/about-asqa/national-vet-regulation/vet-quality-framework.html*>.

Research task 2: The VET System

This task is about the VET system.

1. Access:

    Australian Qualifications Framework Council, 2011, *Australian Qualifications Framework (AQF),* 1st edn, Australian Qualifications Framework Council, Adelaide, available online at: *Australian Qualifications Framework,* viewed August 2012, *<http://www.aqf.edu.au/Portals/0/Documents/Handbook/ AustQuals%20FrmwrkFirstEditionJuly2011_FINAL.pdf>*.

2. Note that there are ten levels of qualification spanning schools, vocational education and training, and higher education.

3. Locate the AQF level summaries and learning outcome criteria (pages 12–13). Compare the *Knowledge, Skills,* and *Application of knowledge and skills* across three levels with which you are familiar. Discuss with colleagues the implications of the *Knowledge, Skills,* and *Application of knowledge and skills* information for resources being developed at these levels.

4. Access the relevant training package or accredited course for the resource you plan to develop for your assessment for this unit.

5. You might use the website *training.gov.au*, *<http://training.gov.au/>*, or documents available locally.

6. Note any information, issues, requirements and restrictions that may impact on the design and content of your resource. You particularly need to look at the relevant units of competency and the assessment guidelines. Access any resources developed for your training package or accredited course unit to check that you are not duplicating something that is already available.

Discuss any points that you cannot resolve yourself with your colleagues, client or key stakeholders. Remember to keep evidence of your discussions and their outcomes and decisions as evidence to support your assessment.

TAEDES502A Design and develop learning resources
Page 12 of 89
1st edition version: 2

Adult learning theories

It is likely that the target audience for your resource will be adults. Much has been written about how adults learn and how to teach adults. There is a broad range of adult learning theories, and these theories can influence the way you design a resource. They include:

- behavioural learning theory

- cognitive learning theory

- experiential learning theory

- information processing theory

- other theories based on current research on learning and teaching in an adult environment.

The following table highlights the key elements of the different learning theories.

Adult learning theories

Theory	Major focus	Key concepts	Theorists	Relevance to teaching and learning
Behaviourist learning theory	Behaviour	• Human behaviour is an observable and predictable response that is linked to a set of conditions or 'stimuli'. • Suitable reinforcement maintains positive behaviours. • Repetition is important to learning. • Punishment is a negative reinforcement which leads to behaviour modification.	Ivan Pavlov John B. Watson B. F. Skinner Edward L. Thorndike	• Explains learning of appropriate skills and attitudes. • Repetition is important to learning. • Link between response and reinforcement is the key to learning. • Trainer rewards with positive comments: a smile, high academic results, a prize for achievement. • Trainer practices negative reinforcement by frowning, low academic results, negative comments. • Learner learns by continuous reinforcement during a number of attempts which repeat or get closer to the desired behaviour.

Theory	Major focus	Key concepts	Theorists	Relevance to teaching and learning
Cognitive learning theory	Knowing	- The emphasis is on the learner's mental structure, the learner's previous related knowledge and the strategies that learners bring to their current learning. - Cognitive approaches are concerned with the way information is processed and shared.	Jerome Bruner Robert Gagne Jean Piaget H. A. Simon[3]	- The learner is an active information processor organising information by relating it to an existing cognitive meaning thereby making sense of his/her environment. - The learner learns by forming concepts from the abstraction of common elements among events and experiences. From these abstractions the learner devises implicit rules that allow him/her to categorise the world and discover a wealth of relationships among concepts.
Experiential learning theory	Learning by doing	The learner must: - be willing to be actively involved in the experience - be able to reflect on the experience - possess and use analytical skills to conceptualise the experience - possess decision-making and problem-solving skills in order to use the new ideas gained from the experience.	David Kolb Jean Piaget Carl Rogers	- Experiential learning is about creating an experience where learning can be facilitated. The facilitator identifies activities that allow learners to understand and absorb concepts. - For experiential learning to be effective, it should employ a number of learning strategies, from goal setting, to experimenting and observing, to reviewing, and finally action planning.

[3] H. A. Simon, 1980, 'Cognitive science: The newest science of the artificial', *Cognitive science,* no. 4, pp. 33–46, *viewed August 2012,*
<http://csjarchive.cogsci.rpi.edu/1980v04/i01/p0033p0046/MAIN.PDF>.

Theory	Major focus	Key concepts	Theorists	Relevance to teaching and learning
Information processing theory	Cognitive processing	• The learner has a three-level information processing and storage system which incorporates 'sensory memory', 'short-term memory' and 'long-term memory'. • The learner learns about learning. The skills of metacognition allow learners to direct, monitor, evaluate and modify their learning and thinking.	George A. Miller	• The learner processes the information through a coding system — a hierarchical arrangement of concepts of increasing or decreasing generality. • Information processing skills for learning, storing and retrieving meaning from textual material. Activities such as using visual imagery, summarising, paraphrasing, analysing questions and using context to facilitate recall.
Current research on learning as it relates to teaching in an adult environment	Adult learning (andragogy)	• Adult learners are self-directed learners, who need to see the relevance in what they are learning. • Adult learners have a wide range of experiences and knowledge and build on what they already know. • Adult learners need clear objectives and achievable targets, and need appropriate feedback.	Malcolm Knowles[4]	• The three key elements of andragogy are that it: • emphasises the skills of decision-making and analysis through a series of job-related cases or problems • establishes a learning approach rather than a teaching approach, by a series of planned, structured activities enabling the learner to acquire appropriate knowledge, skills and attitudes • is a practical, job-based approach, which keeps learners constantly aware of the value of the training program to them and their work.

[4] M. S. Knowles et al., 1984, *Andragogy in action: Applying modern principles of adult education,* Jossey-Bass, San Francisco.

Research task 3: Learning Theories

1. Research two of the learning theories listed in the table above.

    a. For a comparison of instructional design approaches, see: University of Washington eproject, 2003, 'Instructional design approaches', *University of Washington*, viewed August 2012, *<http://depts.washington.edu/eproject/Instructional %20Design%20Approaches.htm>*.

2. Identify the practical applications these learning theories could have in relation to the design approach you are taking with your proposed learning resource.

Discuss your research findings with colleagues.

Understanding adult learning

Most adult learners enjoy learning if the sessions are based on adult learning principles that include:

- allowing learners to direct their own learning and decide what to learn
- acknowledging and using a range of life experiences to further the learning of the group
- encouraging learners to connect their learning to experiences that are meaningful to their own context
- satisfying the learners' need to know why they are learning something
- respecting learners
- making learning relevant and practical.

Adult learning theories are covered in further detail in Topic 3 (Adult Language, Literacy and Numeracy Teaching Theories) of the Knowledge Bank *for TAE70111 Vocational Graduate Certificate in Adult Language, Literacy and Numeracy Practice*. This resource is available for free download from the Innovation & Business Skills Australia website and the content under Topic 3 has been provided for your information in Appendix 1 of this Participant Workbook.

You are now ready to complete **Activity 1: Links Between Theory and Practice** *in the Application section of this workbook.*

Terminology

When designing a resource, you will also need to be thinking about your use of language and terminology. There are some terms that are commonly used in learning and assessment resources. Some of these terms are interchangeable, but you should decide which term to use and then use it consistently throughout the resources to minimise confusion. The list below shows some commonly-used alternatives to refer to concepts. This type of decision at the start saves a lot of time and effort in changing things later on.

- kit/package/resource

- section/topic/chapter

- part/sub-section

- activity/task/exercise

- learner/participant/student/trainee

- trainer/facilitator/tutor/supervisor/teacher/instructor

- client/customer.

TAEDES502A Design and develop learning resources
Page 18 of 89
1st edition version: 2

Topic 2: Overview of the Design Process

The stages of design

The process of designing resources usually involves working through a series of stages which may vary depending on the workplace and the project. These stages include:

1. interpreting and analysing the client and learner requirements for the learning resource

2. researching available and existing resources

3. identifying your learners and the learning environment

4. planning and designing the resource

5. developing the resource

6. implementing and reviewing the resource

7. evaluating the processes used.

The rest of this Participant Workbook will follow the stages in this design model.
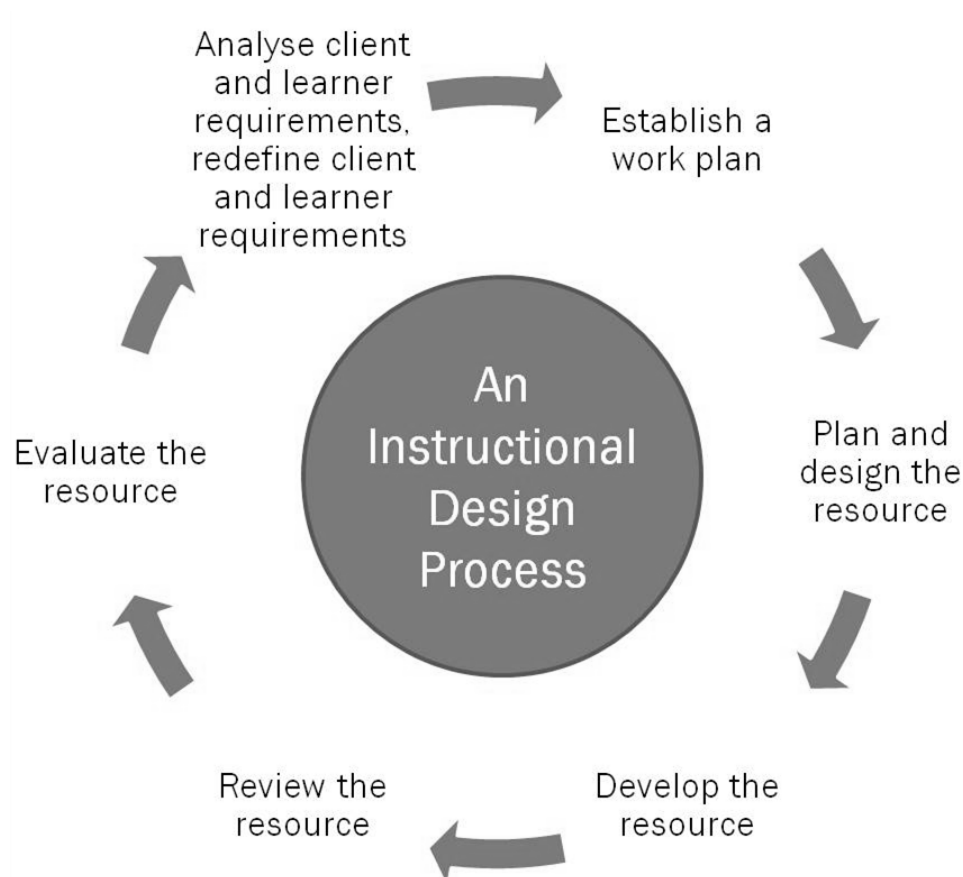
Instructional design approaches

Knowledge of instructional design principles and techniques will help you make sound educational decisions about your learning resource. Some of the key components of instructional design are:

- a systematic approach – working through stages of planning, analysis, design, development and evaluation

- reviewing and implementation

- sequencing of information

- instructional techniques

- communication processes

- environmental considerations.

Once you have made your decision about who the target group is and how the materials will be delivered, you are ready to think about what will be in the learning resource. There are four main considerations:

- content

- organisation

- language

- layout.

The following checklist may help you keep on track.

Content

☐ Determine content with regard to the AQF.

Select material on the basis of:

☐ needs of target group

☐ purpose

☐ application of learning theory

☐ training package/accredited course advice

☐ analysis of training package/accredited course units.

Organisation

Consider:

- ❑ sequencing of topics

- ❑ chunking of items

- ❑ a table of contents

- ❑ starting with an overview

- ❑ inclusion of summaries or reviews along the way to chart progress.

Language

- ❑ Use plain English.

- ❑ Avoid racist stereotyping, e.g. use a range of names that reflect a multicultural society in your case studies.

- ❑ Avoid sexist or discriminatory assumptions.

Layout

- ❑ Ensure consistency with the principles of Universal Design (see Appendix 2 for further information).

- ❑ Develop a style template with a hierarchy of heading levels, body text and bullet points and apply consistently.

- ❑ Break up slabs of information with dot points, headings and graphics.

Topic 3: Analysing Client and Learner Requirements

An Instructional Design Process

- Analyse client and learner requirements, redefine client and learner requirements
- Establish a work plan
- Plan and design the resource
- Develop the resource
- Review the resource
- Evaluate the resource
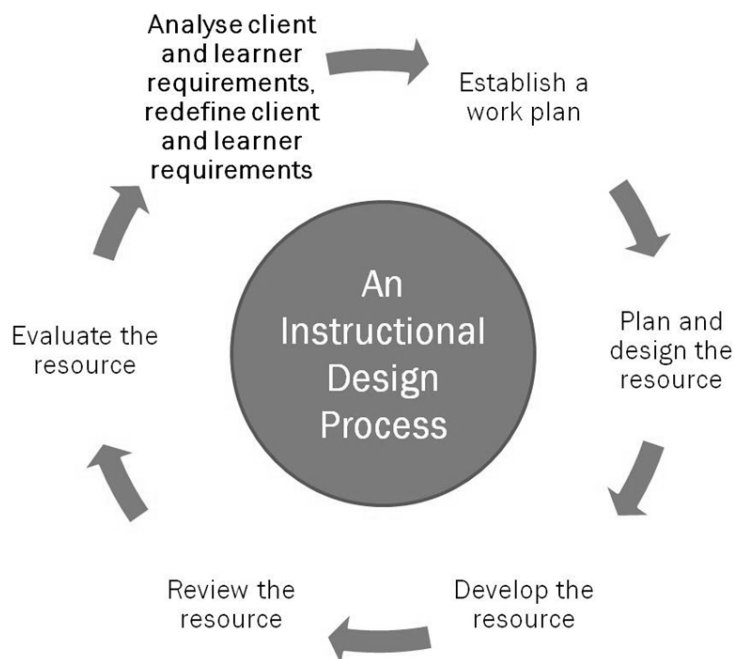
The purpose of this first stage of the process is to prepare for your project. Your brief may be a short document which you present to your manager or it may be a lengthy document which comes out of a tender proposal or a training needs analysis, forming part of a presentation to an external client. Whatever the type of brief you will need to consider:

- client requirements and desired outcomes

- learners' needs

- content specification

- the learning environment

- language, literacy and numeracy issues

- constraints

- resources, personnel

- timeframe and budget

- ethical and legal requirements.

Client requirements

In the VET system, many different types of client in a range of different contexts require development of learning resources. Whatever the situation, you will need to consider the training or learning objectives of the particular program, and the delivery context.

For example, when you are working with an industry client, you should analyse the training and assessment needs in the context of the business needs of the enterprise. This process is called a 'training needs analysis'. It will lead to the final product being more effective because the resources will be clearly linked to the business objectives and skill requirements of the organisation. It may also help you to identify whether *training* is what is needed to achieve the client's desired outcomes, or whether their issues or problems may need to be dealt with through *non-training* solutions, as training is not the only solution to a business problem.

The following flowchart shows the main steps and key questions you could use to determine the needs of your client.

Your business
- What is your product/service mix? How might this change?
- Who are your customers? What are their needs and priorities?
- What is your approach to customer service?
- Who are your competitors? Do you have a competitive advantage?
- What market trends must affect your business? Do you want to grow/develop the business?

Assessment & training
- Do you know what skills and knowledge your employees possess?
- Are there any gaps in the company's skills and knowledge?
- What learning opportunities can be provided to address these gaps?
- How can these learning needs be related to your relevant industry?
- How can these learning opportunities be organised?
- What resources are needed to support learning?
- How will the learning be assessed?
- How will the impact of learning on the business be evaluated?

Business objectives
- What are your business objectives? (Sales, income and expenditure, marketing, staffing, operational, social or environmental.)
- What legislative, regulatory or industrial requirements must be met?
- What are your success indicators?

Small Workplaces (cycle: Your business → Business objectives → Develop an action plan → Skill requirements → Assessment & training)

Skills requirements
- What skills are required to meet your business objectives?
- What are employees' current roles/ responsibilities?
- What skills and knowledge do your employees need to take on?
- What skills and knowledge will they need for these roles?

Develop an action plan
- How will you achieve these objectives?
- Which objectives might be met through improved financing, marketing and resourcing?
- Which objectives might be met through new procedures?
- Which objectives might be met through recruitment?
- Which objectives might be met through staff training and skill development?

Stakeholders

The range of stakeholders who may have an interest in the project should be considered in the design process. Stakeholders might include:

- a human resources department

- employees within a department

- a project team

- a manager

- senior management

- an external body like the Department of Employment, Education and Workplace Relations, who may have provided funding

- the State Training Authority or Industry Skills Council (ISC)

- private consultants

- learners.

Many resource development projects establish a steering committee or reference group to represent the stakeholders.

You are now ready to complete **Activity 3: Stakeholders** *in the Application section of this workbook.*

Resource requirements

Even if you do not have the budget or the time to do a full training needs analysis, it is important to clearly identify what needs to be developed and why. You will need to ask the right people the right questions in order to get the information you need. Below is a list of possible research questions to which you can add your own. You may ask for responses to these questions from the client, your manager, supervisor, department, team or learners — alternatively you may be able to answer them yourself, depending on the project. Remember that a client can be external or internal to your organisation.

Possible research questions

- What is the resource required to achieve (for example, to address a gap between existing learner skills and required skill level)?

- What learning needs are to be met (goals or objectives, competencies, skills, knowledge, attributes)?

- What will the learner be able to do once they work through this resource?

- Who is the resource for? (Describe the learner.)

- In what context will the resource be used? For example, workplace, simulated environment, classroom, distance delivery, a range of contexts.

- Who will be working on the project to develop this product and what will their roles be?

- How does the client envisage the end product? What will it look like, contain, do?

- What are the timeframe constraints?

- What are the budgetary restraints?

- Who are the key people who need to have input into this resource?

- Who will determine whether this resource meets the required need and how will they be involved?

- What ethical and legal requirements have to be included in the content?

In many cases these details will already be outlined in a project brief and may often be referred to as the 'deliverables'.

Research methods

Research can be carried out at all stages of the design process, but a great deal will occur in the initial analysis stage. The following table provides some insight into the 'what, why, and how' of research practice for the designer of learning resources.

Research practice for learning designers

What needs to be researched?	Why?	How?
The topic or content.	So that information is current, accurate and aligns with industry standards and workplace processes.	Gather information from the client, management, the workplace, industry, peers, web and literature search.
VET, AQF and training package/accredited course guidelines.	So that information aligns with industry standards and the resource meets training package guidelines.	Gather information from the relevant authority, ensuring the most current guidelines, standards and competencies, and visit their websites for further information or news.

What needs to be researched?	Why?	How?
Existing materials and resources available.	So that a resource is not created unnecessarily, wasting time, effort and money.	Ask technical or content experts and other trainers for advice. Check within the industry and organisation. Perform a resource search using web, libraries, etc.
The learners.	So that learner characteristics can be identified to help determine the best way to design the resource for the target audience.	Gather information from the learners or their manager or peers using interview, observation or focus groups.

The extent of your research and the methods you use will depend on available information, time, costs and accepted communication methods for those involved. An ethical research methodology that includes open communication about why information is being gathered, and confidentiality is required (refer to the legal and ethical requirements discussed later in this workbook). The methodology that is chosen will depend on the type of resource you are developing. Methods of research include:

- interviews
- focus groups
- informal discussions
- literature reviews
- internet research
- workshops
- phone or face-to-face meetings
- questionnaires
- observation of work practices
- evaluating the quality, efficiency and cost effectiveness of work outputs.

Content specifications

You should be very clear about the specifications of your resource before you start. Having thorough design specifications that are based on research, collaboration and consultation with stakeholders will minimise the risk of major adjustments to the resource requirements later on.

Will the resource that you develop cover:

- a training package or accredited course qualification/s
- a unit of competency or a cluster of units
- a traineeship or apprenticeship (qualification)
- a non-accredited course or learning program
- a work activity
- technology or product specifications
- underpinning knowledge or skills?

Research task 4: Design Specifications Checklist

Access the Section *Purpose of the resource* in the Design Specifications Checklist in Appendix 2.

- What are the most appropriate ways to get the required information from the stakeholders or clients that you are involved with?
- Are there any more questions that you could ask in order to clearly outline the purpose and desired effects of the resource?
- Are there any more questions that you could add to this Design Specifications Checklist so that you can improve this tool for your use next time?

Discuss your responses with colleagues.

Learners' requirements

At the end of your questioning, probing and research, you will need to know what content – information, subjects, topics, skills and knowledge – should be covered in the resource, i.e. what needs to be learned.

Before starting on the design of the resource, you will need to know as much as possible about who will be using it and in what learning environment. This means finding out about the likely learner or target audience and building up a picture of their characteristics.

*You are now ready to complete **Activity 4: Analysis Proforma** in the Application section of this workbook.*

TAEDES502A Design and develop learning resources
Page 28 of 89
1st edition version: 2

Here are some key questions you may wish to add to a proforma you can use for the analysis stage of resource design.

- Who is the learning resource for?
- What is the learning resource designed to do?
- How will it be used?
- Where will it be used?
- What are the possible media to be used?

Learner characteristics

To design a resource that will be appropriate for the typical learners who will be using it, you will need to know as much as possible about their characteristics, which may include:

- age
- work culture, including behaviour in an organisational culture
- level of prior experience or knowledge of content area
- previous learning experiences
- level of education
- cultural and ethnic background
- knowledge of the content area
- disability or support needs
- job being performed
- job type: employment mode (e.g. shift work), workplace (e.g. factory, office)
- industry characteristics
- location
- motivation for learning
- concerns or issues with learning
- English language, literacy and numeracy needs.

Language, literacy and numeracy

LLN built into training

Since 1998, language, literacy and numeracy (LLN) content has been 'built-in' to all training packages and accredited courses and has become an integral part of all vocational qualifications in the Australian Qualifications Framework (AQF). Each state and territory also has stand-alone accredited LLN courses that are delivered as part of adult general education.

In the past, the term 'literacy' was used to imply basic skills such as writing your name and address and being able to sign your name. Similarly, numeracy meant basic skills such as simple addition and working out correct change. Nowadays, these terms are used to mean any reading, writing and numeracy skill. So writing a report, reading VET documents or working out costings of a project can all be described as literacy or numeracy tasks.

Previously, LLN issues in vocational training were seen as an 'equity only' issue, and not critical to vocational training. The 'crux of the matter' is that speaking and listening, reading and writing and using maths in a variety of practical ways underpin workplace skills. For all learners, LLN are key underpinning skills that support vocational learning and the development of employability and workplace communication skills, whatever level of course or training they are doing.

Identifying specific LLN skills needed

Each industry or vocational area has a unique set of reading, writing, oral communication and numeracy tasks that are part of everyday work. A resource developer needs to identify the LLN skills required in the training, and in the industry or workplace, and ensure these are covered in the resource.[5]

During the initial analysis stage, when you are gathering information to inform your design process for the learning resource, accessing the competency standards and any relevant industry materials can help you to establish the LLN requirements. In addition, your research into characteristics of typical learners and an understanding of the Australian Qualifications Framework level of the proposed resource (from Certificate 1 to Vocational Graduate Diploma) will guide the level of complexity of your writing style for the resource.

To identify the LLN requirements of the resource you will need to research:

- the LLN embedded in a training package or unit of competency

- the LLN requirements of the industry or workplace.

Once you have identified the LLN skills needed, it will be useful to align them to the Australian Core Skills Framework (ACSF). The ACSF describes levels of performance in the five core skills (learning, reading, writing, oral communication and numeracy) that are essential for people to participate in social, economic and workforce activities. There are five levels of complexity in the ACSF, Level 1 being the least complex and Level 5 the most complex. By aligning the required LLN skills to the ACSF you will have a picture of where they sit on a complexity scale.

---

[5] *Queensland VET Development Centre, 2011, The crux of the matter: Language literacy and numeracy and vocational education and training, The State of Queensland, Department of Education and Training, viewed August 2012, <http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>.*

A study of Australia's literacy skills in 2006 found that approximately seven million (46%) Australians aged 15 to 74 years had scores at Level 1 or 2 on the prose literacy scale, a further 5.6 million (37%) at Level 3 and 2.5 million (16%) at Level 4 or 5, using a scale similar to the ACSF. This means 83% were at Level 3 or below. So, given this data, if you are developing a resource which is to be read, or which requires a written response, you should consider whether the level of literacy at which it is pitched is reasonable.

In order to be sure that your resource is accessible to all likely users you will need to design and write it so that any LLN issues are minimised. The Australian Core Skills Framework (ACSF) can also help you to do this. If you look at the text features across all five levels, (by looking at Appendix 1 of the Australian Core Skills Framework) you can see the style of texts which are accessible at different levels.

Research task 5: Language, Literacy and Numeracy

1. Access:

   a. Australian Bureau of Statistics, 2011, 'Adult literacy and life skills survey, Australia, 2006 (reissue): Summary findings', *Australian Bureau of Statistics*, viewed August 2012, *<http://www.abs.gov.au/ausstats/abs@.nsf/Latest products/4228.0Main%20Features22006%20(Reissue)? opendocument&tabname=Summary&prodno=4228.0&issue =2006%20(Reissue)&num=&view=>*.

   b. Queensland VET Development Centre, 2011, 'Information sheet 1: Complexity in LLN', *The crux of the matter: Language literacy and numeracy and vocational education and training,* The State of Queensland, Department of Education and Training, pp. 63–64, available online, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>*.

   c. Department of Industry, Innovation, Science, Research and Tertiary Education, 2012, 'Appendix 1: Performance Features Grids', *The Australian Core Skills Framework*, viewed August 2012, Department of Industry, Innovation, Science, Research and Tertiary Education, *<http://www.deewr.gov.au/Skills/Pro grams/LitandNum/ACSF/Documents/ACSF_Document.pdf>*.

2. What are the levels of literacy and numeracy across the Australian population?

3. What are the characteristics of texts accessible at ACSF levels 1–3?

Discuss with colleagues how you might design and write a resource which is accessible to likely users. What ACSF level would you base it on? What are the characteristics of texts at this level?

LLN and access issues

As part of your information gathering you will also need to research the demographics of potential users of the resource to find out if there are likely to be any accessibility issues. Some users will need particular consideration, for example, people to whom the following factors apply:

- speaking a first language that is not English

- being educationally disadvantaged, for example, not having completed an equivalent to compulsory schooling in Australia

- being in older age groups

- having had training disrupted by disability

- having experienced long periods of unemployment

- being from specific cultural or ethnic groups

- being from a culture with an oral communication tradition

- having good English speaking and listening skills but low reading and writing skills

- having good skills in a language other than English, but needing to use English language in an Australian context.

If you are developing a resource which draws heavily on English language skills, you should consider the English language skills of likely users. For example, you may be developing a resource for an industry area or a workplace which employs large numbers of workers from non-English speaking backgrounds, so would need to identify the most suitable resource for this particular group.

*You are now ready to complete **Activity 5: Language, Literacy and Numeracy** in the Application section of this workbook.*

As you develop the resource, ask yourself whether the target group of learners needs to have a certain level of LLN skills to be able to read and interpret the learning resource. It is important that the literacy or numeracy levels required to use the resource is not greater than the levels needed to achieve the competency. This is also the case when designing assessment: care must be taken to ensure that the task does not inflate the language, literacy and numeracy requirements beyond those required by the unit of competency.

LLN issues	Resources
The LLN requirements of the industry or workplace.	• Queensland VET Development Centre, 2011, 'Template 3: Gathering information on LLN aspects of communication in the workplace', *The crux of the matter: Language literacy and numeracy and vocational education and training,* The State of Queensland, Department of Education and Training, pp. 72–73, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/ crux-matter-june-2011.pdf>*.

LLN issues	Resources
The LLN embedded in a training package or unit of competency.	● 'Topic 1: Unpacking LLN from Training packages', *Knowledge bank for TAE70110: Vocational Graduate Certificate in Adult Language, Literacy and Numeracy Practice, TAE80110: Vocational Graduate Diploma of Language, Literacy and Numeracy Leadership,* Innovation and Business Skills Australia (IBSA), Melbourne, viewed August 2012, *<http://www.ibsa.org.au/news-and-projects/news/tabid/112/articleType/ArticleView/articleId/477/TAE70110-Knowledge-Bank.aspx>.* ● Queensland VET Development Centre, 2011, 'Tip 7: Locating LLN in training package units of competency or accredited course modules', *The crux of the matter: Language literacy and numeracy and vocational education and training,* The State of Queensland, Department of Education and Training, pp. 25–29, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>.* ● Queensland VET Development Centre, 2011, 'Template 1: Analysis of LLN macro skills', *The crux of the matter: Language literacy and numeracy and vocational education and training,* The State of Queensland, Department of Education and Training, p. 69, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>.*
Aligning LLN to the ACSF.	● 'Unpacking LLN from training packages', *Knowledge bank for TAE70110: Vocational Graduate Certificate in Adult Language, Literacy and Numeracy Practice, TAE80110: Vocational Graduate Diploma of Language, Literacy and Numeracy Leadership*, Innovation and Business Skills Australia (IBSA), Melbourne, p. 22–26, viewed August 2012, *<http://www.ibsa.org.au/news-and-projects/news/tabid/112/articleType/ArticleView/articleId/477/TAE70110-Knowledge-Bank.aspx>.* ● Queensland VET Development Centre, 2011, 'Tip 8: The ACSF and LLN levels, *The crux of the matter: Language literacy and numeracy and vocational education and training*, The State of Queensland, Department of Education and Training, pp. 30–32, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>.*

LLN issues	Resources
Aligning LLN to the ACSF (cont.)	• Queensland VET Development Centre, 2011, 'Information sheet 1: Complexity in LLN', *The crux of the matter: Language literacy and numeracy and vocational education and training*, The State of Queensland, Department of Education and Training, pp. 63–64, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/ crux-matter-june-2011.pdf>*.
An estimate of the LLN skills of likely users.	• Australian Bureau of Statistics, 2011, 'Australian literacy and life skills survey, summary results, Australia, 2006 (reissue)', *Australian Bureau of Statistics*, viewed August 2012, *<http://www.abs.gov.au/ausstats/abs@.nsf/mf/ 4228.0>*. • 'Topic 2: Learner characteristics', *Knowledge bank for TAE70110: Vocational Graduate Certificate in Adult Language, Literacy and Numeracy Practice, TAE80110: Vocational Graduate Diploma of Language, Literacy and Numeracy Leadership,* Innovation and Business Skills Australia (IBSA), Melbourne, pp. 27–36, viewed August 2012, *<http://www.ibsa.org.au/news-and- projects/news/tabid/112/articleType/ArticleView/ articleId/477/TAE70110-Knowledge-Bank.aspx>*. • Queensland VET Development Centre, 2011, 'Template 4: Gathering information on LLN communication modes to develop assessment questions', *The crux of the matter: Language literacy and numeracy and vocational education and training,* The State of Queensland, Department of Education and Training, pp. 74–75, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/ crux-matter-june-2011.pdf>*.
Making designs accessible to learners with disability or LLN needs.	• Queensland VET Development Centre, 2012, 'Universal design checklist', viewed August 2012, *<http://training.qld.gov.au/information/equity- diversity/resources-tools/index.html>*.

The learning environment

Where will the learning take place, and in what context? How will the resource be used? The answers to these questions will inform you about the learning environment. If the resource is to be used in the workplace, you will need to conduct research on where and how the learners will use it.

For example, will learners use the resource as a reference after they have used it in a learning context? Will it be a 'handy reference' that needs to be easy to read? Will it be a checklist that can be copied and filled out a number of times? Will it need to include pictures or diagrams to show equipment use or explain work procedures?

The resource you design may be used in a classroom or as a self-paced resource in a range of 'flexible learning' contexts. If it is self-paced, it will need to include comprehensive instructions and guidance, because the trainer will not be there to explain everything as they would in a classroom. It may need to be flexible to give the learners choices about how to learn and show their competence and skills. It may also need to include lots of case studies and workplace examples, especially if the learners are not yet in the workplace being exposed to real-life work experiences.

Ethical and legal requirements

In the initial stages of analysing requirements for the learning resource, you should take time to identify any relevant ethical or legal considerations. For example, are you required to draw up a contract with your client? If so, then you may need some professional advice and support on this from the legal or financial departments of your organisation. Also, most organisations have codes of conduct in relation to privacy requirements. You should familiarise yourself with your practice environment's privacy requirements and any relevant procedural communication channels.

Research task 6: Policies and Procedures
Investigate the policies or procedures in your practice environment regarding one or more of the following areas: ● contracts and meeting contractual requirements ● intellectual property rights — those of your organisation, your client, the subject content experts ● regulatory requirements including health and safety requirements ● equity issues and needs ● potential legal consequences regarding false, misleading or incorrect information (professional indemnity) ● privacy needs and communication protocol. Share the results of your research with colleagues.

Research task 7: Ethical and Legal Requirements

When developing assessment resources for the VET system, developers also need to be aware of and comply with the legal, organisational and ethical requirements associated with assessment practices.

These include:

- maintaining client privacy and confidentiality
- providing accurate information
- duty of care under common law
- Australian Quality Training Framework (AQTF)/VET Quality Framework requirements.

Discuss with colleagues how they respond to these requirements when developing assessment resources.

Who is involved?

For some resources you might discuss with others what is needed and then carry out the design of the resource on your own, especially if it is to be used in your own practice environment. For other resources, there may be a team of people involved in the design and development.

Roles of those involved can include:

- client (internal or external)
- colleagues
- industry advisors (ISCs)
- learners or users
- unions
- human resources
- content experts.

Specialist consultants may also be involved, such as:

- language, literacy and numeracy experts
- VET experts
- health and safety experts
- technical experts
- flexible learning consultants
- managers/supervisors
- graphic designers
- desktop publishers
- editors
- instructional designers
- reviewers.

Topic 4: Establishing a Work Schedule

Analyse client and learner requirements, redefine client and learner requirements

Establish a work plan

Plan and design the resource

Develop the resource

Review the resource

Evaluate the resource

An Instructional Design Process
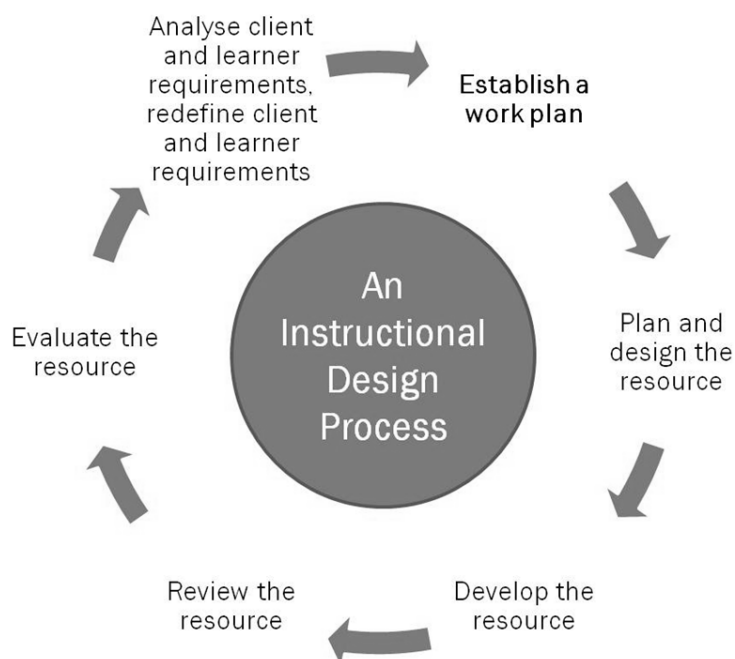
Once you have a project brief, you can develop a work schedule which will help you to organise how you – and the project team if you have one – will go about designing and developing the resource.

A work schedule is also referred to as a 'timeline' or 'action plan', and it contains a plan of the key stages and milestones in the project's progress. It enables the client to know when they will receive drafts and the final product and also gives the project team a view of the steps in the process, the deliverables, what tasks are expected of them, and when they should be completed. A timeline is often used in conjunction with a more detailed checklist of tasks, with people and due dates assigned to each one. This enables the project manager to monitor and track progress.

What is included?

A work schedule can be developed consultatively to ensure all critical actions or tasks are listed. These can include:

- scheduled meetings with the client, learners or key stakeholders
- focus groups
- timelines and milestones to be achieved
- the key stages of the project
- review or trialling stage tasks
- production stage tasks
- identification of risks, and risk management strategies.

Format of the schedule

Your schedule is likely to have a table that summarises activities against a timeline and may also include additional details such as:

- equipment and material requirements

- handover requirements

- industry information

- budget information

- issues and concerns

- access required to experts or advisors

- organisational or industrial politics.

Example of a work schedule

	May					June				July			
Task	2	9	16	23	30	6	13	20	27	4	11	18	25
Stage 1: Planning, set up, design													
Project set up, contract signed	▓												
Reference committee meeting conducted	▓												
Research into existing resources conducted	▓	▓											
Stage 2: Design of first draft													
First draft prototype developed		▓	▓										
Review/trial completed			▓	▓									
Prototype endorsed by Steering Committee				▓									
Stage 3: Development of complete drafts of all resources													
All resources developed				▓	▓	▓	▓						
Graphics planned/ development begun							▓	▓	▓				

Task																
Copyright issues addressed						▓	▓	▓								
Resources reviewed						▓	▓	▓								
Stage 3 deliverables presented								▓								
Stage 4: Implementation																
Resources trialled											▓	▓	▓			
Report on trial presented to Steering Committee											▓	▓				
Feedback collated and inserted											▓	▓				
Revised drafts endorsed by Steering Committee												▓				
Stage 4 deliverables presented												▓				
Stage 5: Publication and distribution																
Steering Committee meeting: sign-off completed															▓	▓
Final materials produced															▓	▓
Stage 4 deliverables presented																▓

Research task 8: Work Schedules and Project Management

Many examples of work schedules and project management timelines are available.

Some designers use project planning software with GANTT charts to plan and track a project. Others prefer to have a checklist of tasks with people and due dates assigned to each one.

Your work schedule could be divided into the different stages of the design process, or there may be another approach that is more useful to your practice environment. You need to demonstrate that you can use a work schedule or project management timeline to plan the development of a learning resource.

Other reports may be used during the project such as:

- Project outline: a report to the client that summarises your approach or methodology, equipment and resources, people involved in the project, breakdown of costs, milestones, key tasks and timelines. It will give details of the form and content of the resource to be developed.

- Budget reports: these may be required for the client, and the finance department of your organisation.

- Project status reports: these report to the client at key stages of the project on progress to date and key issues or requirements.

Locate work schedules and reports required in your practice environment, and compare them with those used by colleagues at other training organisations.

Discuss those you think would be most useful to you as project management tools.

You are now ready to complete **Activity 7: The Work Schedule** *in the Application section of this workbook.*

Topic 5: Planning and Designing the Resource
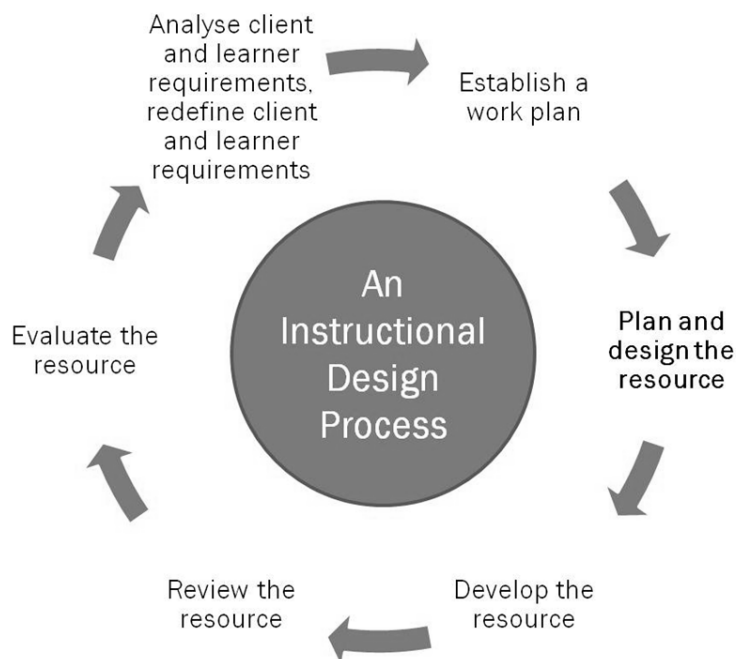
Developing an instructional strategy

This is the stage where you can plan and design the resource itself. This plan is essentially your 'instructional strategy'. It will guide you in your decisions about framing learning activities, selecting methods for presenting the information to the learners, and developing assessment items and research tasks. Your decisions will be based on what you have learnt about your client requirements, the learner profile and learning environment. This instructional strategy incorporates information, activities and resources for the teacher and learner and also outlines the methods and resources you will use to help the learners to achieve competency. This is the point where you draw on your understanding of the learning theories outlined earlier in this workbook and the information you have discovered about your learners, and their language, literacy and numeracy skills.

At this stage you can use brainstorming to generate a range of ideas for the resource. You may already have had ideas about specific tasks, activities or information that must be included. Here it is fine to jump between the two stages of planning/designing and developing rather than working in a linear manner.

Design options

First of all you will need to generate a range of design options, getting ideas for the type of material that will be in the resource. Options may include:

- text-based information and ways of presenting it, such as text, questions and answers, or case studies

- diagrams

- photos showing a process

- practical activities

- collaborative activities

- project activities

- practice requirements

- assessment activities

- research.

Outline

After generating design options you will need to take time to reflect on them. It is a good idea to put together an outline, a shell, or part of the resource in draft form, then to discuss your ideas and thoughts with a colleague or the client in order to get another opinion on which design ideas are the most appropriate.

The aim is to get to the point where you have designed and developed an outline (also referred to as a *prototype, skeleton, template* or *proof of concept*) that includes enough detail to clearly demonstrate a complete learning sequence.

Generating ideas

In order to come up with ideas and sketch out some activities, you need to be creative. It may be best done alone or you may find that bouncing ideas around with work colleagues works better. Alternatively, you may need to work creatively with a subject matter expert. Some creative thinking techniques you could use are listed below.

Techniques	Methods	Suggested resources
Brainstorming Thinking of ideas on your own or with others.	All ideas should be written down, even if they appear illogical, then they can be discussed and sorted.	Chatting to managers, learners, work colleagues and industry experts generates lots of ideas.

Techniques	Methods	Suggested resources
Challenging the norm Thinking 'outside the square' to find different approaches to existing methods or techniques.	One tactic is to focus on what effects and outcomes you would like to achieve, rather than thinking about the resource itself.	Refer to De Bono, E., 1985, *Six thinking hats,* Little Brown and Co, Boston, USA. An internet search reveals a lot of information about this method of looking at a topic in different ways.
Mind mapping A method of visually mapping thoughts and finding logical connections between a number of areas and topics.	Write down key words as your ideas flow. If you are not sure where to put them, just get them down first, and then reflect and sort the information you have.	Find out more about mind mapping by searching the internet. An example is: Illumine Ltd's web page, 'Mind mapping software packages', *Illumine training: Better brains for better business*, viewed August 2012, *<http://www.illumine software.co.uk/>*.
Visualising the learner at work	Visualising or observing the learner performing tasks in the workplace can provide ideas for activities and critical information required to perform tasks.	Visit learners or employees who demonstrate the skills to be covered in your resource to observe them performing work tasks.
Flow charts To define work processes and procedures learners need to follow.	Flowcharts will help define the sequence of information to be presented to the learner and can be used as summaries or outlines in the resource.	Use documentation that has already been created about the sequence of work tasks, or observe the work tasks and interview employees.
Jotting words Write down key words as your ideas flow.	If you are not sure where to put them, just get them down first, and then reflect and sort the information you have.	Mind maps are a good format for jotting down key words, as it is easier to visually make connections to a number of areas or topics at once.

Research task 9: Generating Ideas
Research at least two of the techniques outlined above which you think might be useful for exploring ideas for your project. Discuss with colleagues which ones you think would help to generate ideas.

Design influences

Each individual designer is influenced by a number of factors. The key information that should direct your design is: what your end-user needs to learn, the appropriate level of information they need, and the learning environment they will be in. The diagram below shows some of the influences that impact on the way you design learning resources.

Influences on resource design

The Learning Resource

- Research
- Adult learning theory and concepts
- Learner's prior experience
- Analysis of learners and environment
- The AQF level
- Deadlines
- ID theory
- Finances
- Creative thinking
- Client needs
- Industry requirements
- Expert advice
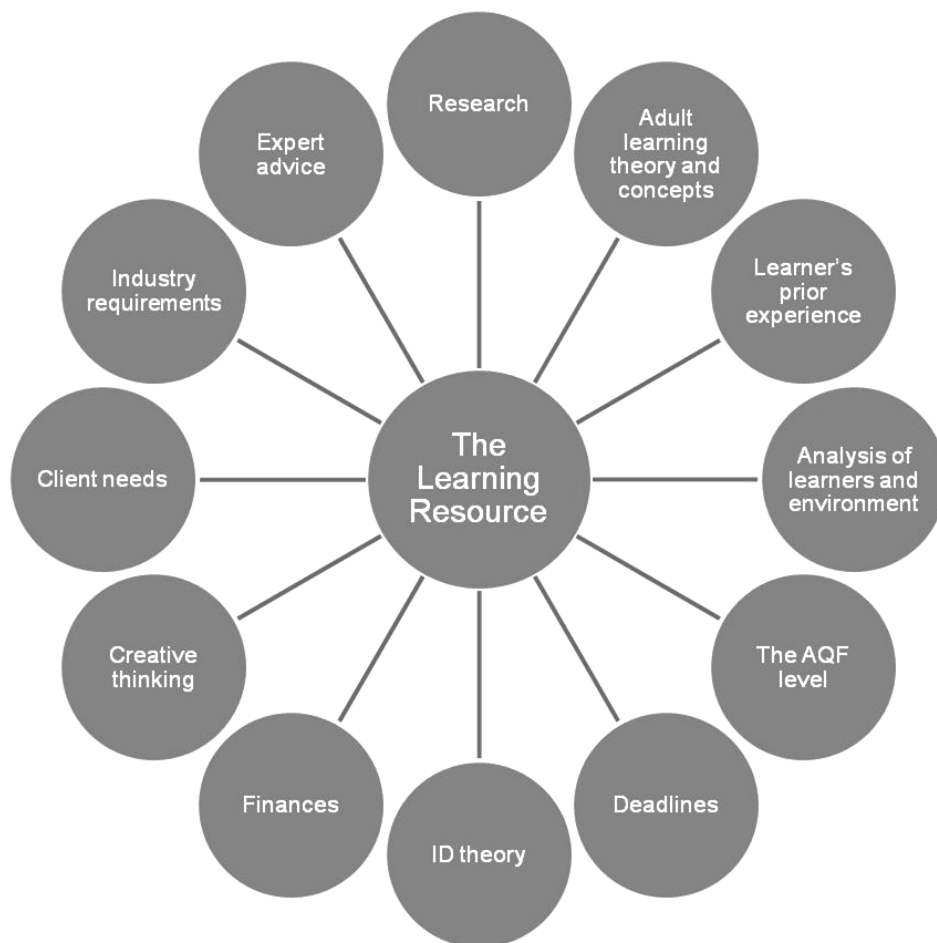
Sequencing

Deciding on the sequencing of the content is an important part of designing an outline. The sequence in which material is presented will affect how easily learners understand the information. There are a few different options. Two of these are:

- moving *from the known to the unknown*:
  start with material that learners know about and move on to new material

- moving *from the global to the specific:*
  start with the big picture then move on to more detailed information once learners have an understanding of what they will cover.

Alternatively, you may wish your resource to be flexible enough for learners to work through the topics in any order.

Designing activities

Including some activities in your resource can give your learners the opportunity to build knowledge and to practise skills. Other activities can provide an opportunity to get learners to demonstrate their competence in skills and knowledge and provide evidence of competence for assessment purposes.

The activities you plan may be:

- practical (including in a simulated environment)
- collaborative
- project-based
- research-based
- problem-based
- workplace-based
- reflection-based.

They could include the following elements:

- questions and answers
- case studies
- investigation or research activities
- goal-setting opportunities
- group projects
- PowerPoint presentations
- multiple-choice questions

- games

- practical demonstrations

- online activities and research.

Writing activities and instructions

The instructions or activities you write should clearly instruct a learner to complete a task that is observable and measurable. To do so, you should use words such as *list, design, evaluate, identify* and *explain*, rather than *know, understand, appreciate* and *develop a grasp of*. For example:

- 'write a report'

- 'participate in a role-play'

- 'make a presentation'

- 'design a process or product'

- 'find the faults'

- 'draw conclusions'

- 'formulate recommendations'

- 'use the template'

- 'collect …'

- 'write a procedure'

- 'document a process'

- 'give feedback'

- 'write an action plan'.

The words that you choose to direct the learners to complete an activity will depend on the type of learning that you want to target. For example:

- to promote learning of knowledge, use words like: *define, identify, label, match, record, select*

- to promote comprehension, use words like: *describe, explain, interpret, summarise*

- to promote the application of skills, use words like: *demonstrate, develop, operate, practise, use.*

The tasks set should always be appropriate for the numeracy and literacy level of your target audience.

TAEDES502A Design and develop learning resources
Page 46 of 89
1st edition version: 2

<table>
<tr><td>Research task 10: Applying Bloom's Taxonomy</td></tr>
</table>

1. Access:

    Dalton, J., *Applying Bloom's taxonomy*, viewed August 2012, *<http://www.teachers.ash.org.au/researchskills/dalton.htm>*.

2. Note the range of verbs from *Knowledge* to *Evaluation*, and the suggested samples at each level.

3. Design some appropriate and relevant instructions for activities relevant to your project. Do the instructions focus at a particular level, for example, *application*, or do they stretch to include *analysis*, or *evaluation*? What is appropriate given the project you are working on?

Discuss with colleagues whether your instructions are clear, observable and measurable.

Writing assessment materials

If you are designing a resource that is support material for a unit of competency from a training package, you must carefully check any assessment requirements relevant to that unit. When reading through the unit of competency, spend time looking at the evidence guide, as this contains an overview of the assessment requirements and will give you ideas of the type of assessment required.

Ask yourself:

*   What must the learner be able to do by the time they have worked through this resource? That is, what will they do to demonstrate they have the necessary skills, knowledge and attributes?

*   How will their competence be assessed?

*   What evidence will be needed to show their competence?

As you plan your resource outline, read through the elements and performance criteria and check them off once you are confident that your resource will address each of these adequately. As you generate ideas for how to present information around learning goals or objectives, you will also be generating ideas on how to measure the learners' competence around these goals or objectives. Attaching your assessment ideas to your outline ensures you have created assessment items that cover all the key areas of the program. You can put more detail into the assessment items in the development stage.

| Research task 11: Brainstorm Ways to Meet Unit Requirements |
|---|
| Consider your practice environment and the unit's elements and performance criteria that your resource will need to cover.

Reflect on these and brainstorm ways to address these in your resource. You may wish to discuss this with your facilitator and/or colleagues. |

Review at the planning stage

*You are now ready to complete **Activity 8: Resource Outline** in the Application section of this workbook.*

If your planning has been thorough, the resource should flow in a logical way, making it easy to read, as well as allowing learners to interact with the material so that they are actively learning, not just passively receiving information. It should also enable learners' skills and knowledge to be measured: assessment of competence is an integral part of your resource design.

At this point your outline and assessment ideas can be reviewed by your client, colleagues, manager or prospective learners. The key stakeholders may also provide you with feedback about your plan. Ask questions to determine if you are on the right track, whether the material is relevant, what they expected and if you are meeting their needs. You should listen to their responses, and even conduct further research, then modify the resource outline based on their feedback. Then you can use the outline to develop the resource in detail. It is frustrating and wasteful if at the final stage you find that it does not meet expectations and will not be used by prospective learners. It is best to gain feedback throughout the research and planning stages to ensure support for the resource from clients and learners.

Topic 6: Developing the Resource
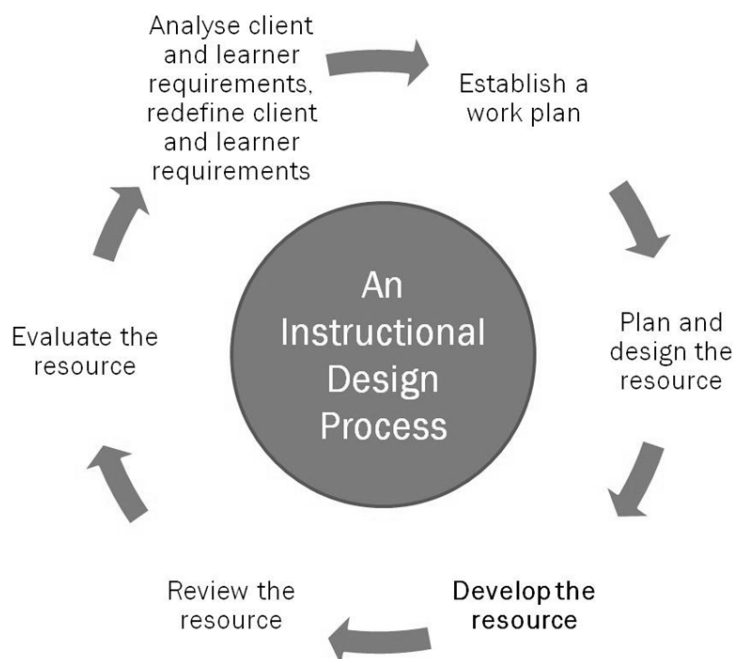
This stage involves writing the content of the resource. After all your efforts in researching and planning, this is when you can be innovative. Don't worry if the task feels daunting – it can often be struggle for writers to get their ideas down on paper in an interesting way.

Write the resource based on your outline, expanding on your key topics and main points. There is no one way to develop your resource. Even when different designers begin with the same information, the resources they develop will never be identical.

What makes a good resource?

An educationally sound resource will:

- meet the required learning need

- involve the learner

- keep the target audience in mind

- be related to the learner's own situation and existing experience

- enable the learner to reflect

- encourage the learner to share their experience with others

- provide information 'chunked' into sections to aid retention

- contain a variety of tasks or activities

- flow in a logical sequence

- include text that is clean, concise, grammatically correct and appropriate for the learner

- include visuals that are relevant, instructive and appropriate for the learner

- include the right amount of information with additional references that can be followed up

- create effective learning experiences that are based on relevant learning theories and which facilitate authentic tasks.

How much detail?

Keep your learner in mind while drafting your resource. The breadth and depth of the content needs to be determined by the needs of learners and the level they are at. For example, whether they are learning new concepts at a low level or are advanced learners who need in-depth theory and specialist information.

Another factor that influences how much detail to include is the amount of time and money you have to produce the resource. The reality of designing within a given budget may be a key factor in determining the complexity of your resource. If your budget is minimal, then you may need to consider giving the learner some complementary avenues for learning, such as providing research information and a resource listing.

Interacting with the learner

It is unlikely that the resource you are designing will be a textbook. It is more likely to contain *some* information, but it will also ask learners to do things: to put new information into practice, to compare it to information they already have, and to carry out tasks that enable them to demonstrate their newly acquired skills, knowledge or attributes.

As well as keeping in mind the type of learner, you need to take into account their learning location. What type of activities are practical for them to do? For example, is group work out of the question if they are in a remote location, or might access to internet communication software such as Skype enable group work? Are they in a workplace where learning activities should replicate what they do in their job role?

Using a variety of activities will keep your learners interested. Activities should help your learner to develop and apply skills and knowledge in context. That is, they should provide focused experience, based in the real or simulated practice environment.

It is important to address any specific workplace-related requirements. Some requirements to consider include the following items which you may have identified in your research:

- workplace-specific work practices and procedures

- workplace-specific health and safety requirements

- workplace-specific and/or industry-specific cultures and ethics.

Visual design

Your resource needs to be clearly presented. Depending on the scope of your project, you may be producing the resource on your own, or you may have a graphic designer, desktop publisher or a printing department or company do this work for you.

There are many ways to present information visually, and it is best to speak to a person with graphic design or desktop publishing skills for guidance. However, there are some general rules (listed below) that you should be aware of when thinking about visual design.

- Use pictures, photos, graphics, diagrams, tables and dot points to break up the text. Where possible use photos and visuals that have immediate relevance to the likely users.

- Keep the layout clear and clean, using white space on the page.

- Experiment with line spacing. Are resources written in multiple spacing (from double spacing down to 1.15) easier to read than those with single spacing?

- When formatting, use as few fonts as possible. Avoid complex fonts and too much bold, underlining and capital letters. Generally, *serif* fonts (fonts with tops and tails) such as Times New Roman are good for large amounts of body text, because they are easier to read. *Sans serif* fonts (fonts without tops and tails) such as Arial are good for on-screen resources, as is Verdana, which has been designed specifically to be readable at small sizes on a computer screen.

- Dark-coloured type on a light-coloured background is easier to read than light-coloured type on a dark background.

- Use icons to help guide your learners. You can use icons consistently to signal to the learner when they will need to:

  - perform an activity

  - conduct internet research

  - work with a group.

- Design a template (or ask your designer or desktop expert for help) to provide a shell of a document to use to write the draft of your resource.

- Divide your resource into logical sections: introduction, resource list, contact details, assessment requirements, key learning topics, bibliography, appendices, glossary, and so on.

Example 1

Sue noticed that her ESL students often wrote the meanings of words in tiny writing over the English wording in their workbooks. She redesigned her workbooks with wider margins, wider spacing between the lines and a more detailed glossary, with words highlighted in italics, placed at the back of the book for quick access.

Example 2

David designed an induction booklet for his first year flexibly-delivered class. He called on the talents of one of his second-year students to draw very 'cool' cartoon figures that would be used to highlight the points that he wanted to get across.

Example 3

Angelo's mechanic apprentices took their workbooks into the workshops with them and had them close at hand when they performed practical tasks. The workbooks already contained lots of labelled diagrams but he noticed his learners were adding extra notes and diagrams as they completed the tasks. So he made sure all new resources allowed additional space for notes and had only one diagram on each page.

Research task 12: Universal Design

1. Access:
 	
    a. 'What is Universal Design and how can it be implemented?' *Australian Flexible Learning Framework*, viewed August 2012, *<http://pre2005.flexiblelearning.net.au/guides/ universal.html>*.
 	
    b. 'Resources and tools', *Queensland Department of Education, Training and Employment,* viewed August 2012, *<http://training.qld.gov.au/information/equity-diversity/ resources-tools/>*.
 	
2. See resources in listed in Appendix 3 of this Participant Workbook.
 	
Note that these have been written for people with a range of disabilities. Discuss with colleagues why it would be a good idea to use these design principles in the resource you are creating.

Version control

You will probably produce a number of drafts of your resource before you are happy with it. Systems for version control and backups of files are important to ensure quality control and the safe storage of your work. Your practice environment may have an in-house system of knowledge management or document management so that mistakes cannot be made by using wrong or old versions of documents. Meticulous file naming and numbering protocols are used to facilitate this.

You are now ready to complete **Activity 9: What Makes a Good Resource** *in the Application section of this workbook.*

Red Horizons Clothing

The training department at Red Horizons Clothing have a records management system that includes the control of documents related to policies, procedures, forms, manuals and assessment materials.

The system includes a document control master list of all the documents that require version control. This control list notes the name of each document, the issue date, the authorising person and the current version number and date.

Individual documents within the controlled system all have a footer, which notes the document name and version, as in the following example.

Practical assessment checklist BSBCMM301A Process customer complaints	Version 1.2
Red Horizons Training	Page 2 of 5

When 'major' changes are made, the first number (whole number) changes on the document version number, minor changes are noted by a change in the number after the decimal point.

When documents are updated, the document authoriser updates the document control master list and sends an email to all staff at Horizons training to let them know a change has been made.

Each staff member is then responsible for ensuring that the documents used are the most recent version.

If you are working on your own, outside an organisation, you must set up your own error-free system.

Here are some tips for managing version control when working on your own:

- Ensure that you save more than one version of each learning resource. If a file corrupts, you should be able to work from a previous version or draft instead of starting again from scratch.

  Saving several versions throughout the process also allows you to go back at a later date and see how your development of the resource progressed.

- Make sure you save your work in progress, completed work and reviewed work in separate folders so that these documents don't get mixed up.

  The following arrangement of folders is one example of how to organise work in a project folder:
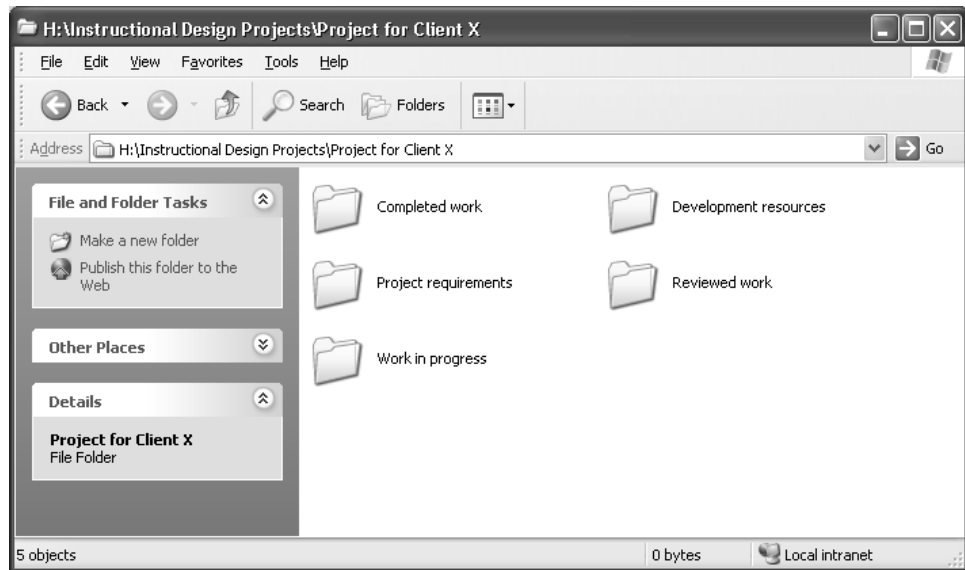
- Each version of your resource should be saved with the version number in the file name. This ensures that you can easily identify which file is the most up-to-date when you need to come back to work on it, or when you need to send your most recent work to a client or stakeholder for review.

- Save your working documents and resources in the same area. If you download resources or relevant materials, you need to make sure that you save them to your project folder, rather than let them sit in a downloads folder and get separated from your other material.

- Make sure you back-up your work regularly. You should ensure that your work is saved on more than one electronic device (such as an external hard drive) or save online (using an online backup system) so that you can access it again in case of file damage, computer damage or theft. Set your computer to back-up automatically, or set a regular reminder to back up your work.

Style and layout

A very useful, handy reference on all aspects of developing publications is:

- Commonwealth of Australia, 2002, *Style manual: For authors, editors and printers*, 6th edn, John Wiley and Sons Australia, Ltd, Canberra.

It has a specific chapter dedicated to the design and layout of a publication, as well as detailed information on Australian writing and editing standards.

Many training organisations have their own style guide for publications. Check the preferred style guide in your practice environment.

Copyright, intellectual property and acknowledgements

Make sure the text and graphics you include in your resource is original and not copied from other sources in order to avoid copyright issues. If you do wish to use material from other sources, including web pages, diagrams, quotations and organisational information, then copyright permission may need to be obtained. This can sometimes take time and may incur costs, so try and keep the need for this to a minimum.

A good tip is to identify information for which you will need copyright permission as early as possible in your project. It often takes time to 'seal the deal' with the copyright owners and get written permission. If it takes too much time, you may need to have a 'Plan B' and find an alternative. There may be other ways of presenting the information to your learners, for example, you could direct them to websites and texts for research or further reading.

Often organisations are happy to give permission for company-specific information to be used in resources that are used exclusively for training their own staff. You will need to check with management.

If material is used in your resource that is from another source, ensure you follow the correct procedures for citation and/or obtaining copyright permission and acknowledging the source in the resource. A useful source of information about copyright is the Australian Copyright Council's information sheets: *<http://www.copyright.org.au/find-an-answer/>*.

The resource you are designing may also have intellectual property constraints or copyright which may need to be documented in the publication. You should check the requirements of your organisation or your clients in relation to this.

Research task 13: Copyright and IT Acknowledgement
Check the copyright and trade mark information for this Participant Workbook. Who is able to use the materials? For what purposes? Do they need to seek permission?

Self-reflection

During the design stage, you may have had the client, learners and other key stakeholders review your plan before working on the details of the resource. Once you have designed the detailed the content you may want these key people to review it again, in order to incorporate their feedback. It is better to have feedback at this stage rather than later on when revision will be more time-consuming and costly.

Before getting feedback from others, however, you should take time to reflect on the draft of your resource. It is sometimes useful to leave the resource for a short time and come back to it with fresh eyes.

Some other suggestions include:

- try using the resource yourself as if you were the learner
- review the key outcomes required and check that these are clearly addressed by the resource
- read it from the perspective of the target audience
- discuss the details with others
- review your own skills and acknowledge weaknesses in relation to the resource development process.

It is very useful to be able to accept constructive criticism and use it to improve your knowledge and skills in learning design.

Topic 7: Reviewing the Resource
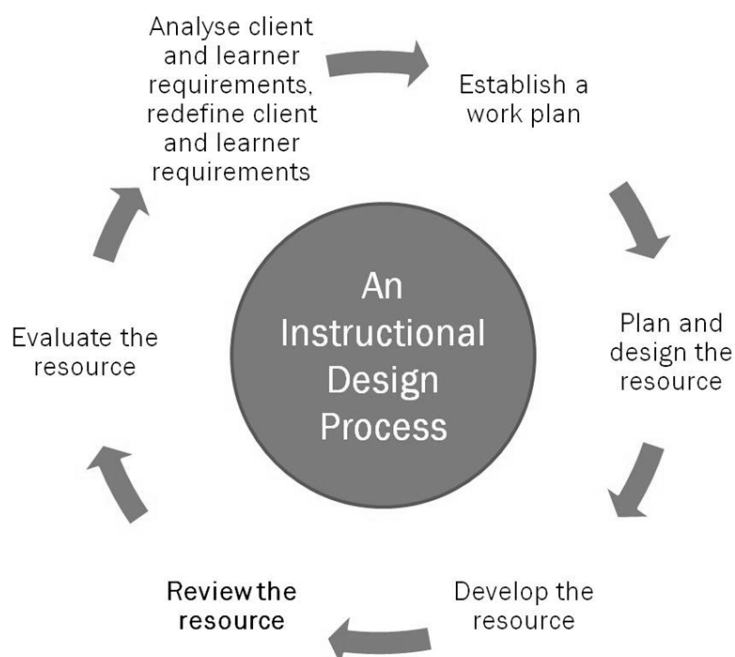
The resource may go through a formal review process before it is used by the intended audience. This step can often be overlooked or undervalued, especially if you have a short timeframe or are struggling to meet a deadline.

Ideally, you should review the resource with a group of learners after they have used it. Feedback received three to six months after a resource has been used can provide quite different information to that collected before it has been used.

Planning the review

What will the review entail? Ask yourself the following questions:

- What technique is most suitable given the time and resources available?

- What method would best suit the people who will participate in the review?

- What type of information will be collected and what is the best way to gather this information and collate it?

- What specific questions will be asked to gather the feedback needed?

Before designing the method for gathering feedback, you should know how you are going to collate it and what you will do with the information.

Review checklist questions

Asking questions about the design of the resource is important. Here are some questions to get you started:

- Has the target audience been identified?

- Is the material appropriate to the target group?

- Is the material appropriately structured?

- Is the material easy to read and well-written?

- Is industry-specific terminology explained?

- Is the resource easy to use and navigation simple?

- Does the material create a pathway for learning?

- Is the material interesting to read?

- Is the material based on relevant learning experiences?

- Is there a variety of tasks to keep the learner interacting with the resource?

- Are the tasks authentic?

- Does the material encourage 'transfer of learning', that is, the application of skills, knowledge, and/or attitudes that were learned in one situation to another learning or work situation?

- Does the resource meet training package guidelines where applicable?

- Does it match the outcomes of the unit of competency?

Review methods

Review methods will vary according to the specific situation and can include:

- focus groups

- questionnaires (online or print-based)

- checklists

- workshops

- telephone interviews

- meetings with experts, client and so on.

Determine how you will record the feedback you receive and if you will present this information to the client, colleagues or other key stakeholders.

You will also need to think about which recommendations to act on and which to ignore, especially as making changes may increase the time and costs of developing the resource. These may be issues that you need to discuss with the client.

Expert advice

It is often beneficial to have the content of your resource checked by others, such as content experts, industry experts, technical experts or education experts, to ensure that it accurately reflects workplace processes and current practice.

If you do need to involve experts in reviewing your resource, then it is a good idea to get them involved early in the planning. Make sure you check your outline and instructional strategies with them before you start. This will lessen the chances of a costly rewrite or frustrating delays in the later stages of development.

You should decide how to deal with conflicting advice and then obtain agreement on your suggested process from everyone on the team and the steering committee.

You should also keep records of feedback and the process put in place to deal with it so that if there are any queries later on, for example, at the sign-off stage, you can respond confidently.

*You are now ready to complete **Activity 11: Resource Review** in the Application section of this workbook.*

Topic 8: Evaluating the Processes

An Instructional Design Process

- Analyse client and learner requirements, redefine client and learner requirements
- Establish a work plan
- Plan and design the resource
- Develop the resource
- Review the resource
- Evaluate the resource
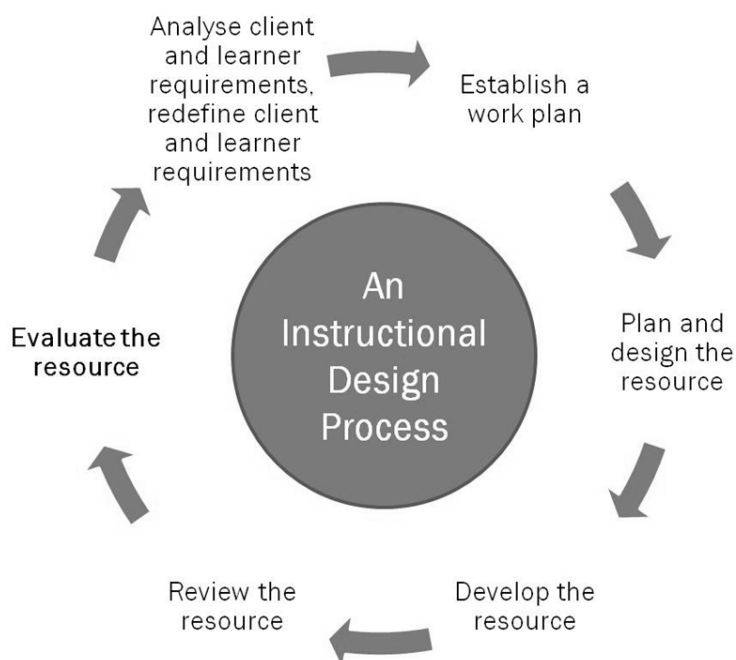
After the resources are used by the learners, you should evaluate the development process and the effectiveness of the resource itself. It is worth taking time to reflect on this: what you did, how you went about it, what you achieved, and if the process could be done better next time. This is a natural step in aiming for continuous improvement and ensuring a quality approach to the design of educational resources. This can be done by you, the client, your team or other relevant people. You should identify improvements and document them for future projects.

Evaluation process questions

Here are some questions you could ask to evaluate your processes against specific criteria:

Client satisfaction

- Does the resource meet the requirements of the brief?

On time

- How close to the scheduled completion time was the resource actually completed?
- What did I learn about scheduling that will help me in my next project?

On budget

- How close to budget was the final project cost?
- What did I learn about budgeting that will help in my next project?

Design

- Is the design appropriate?

- Is it varied and does it capture learners' attention?

- Are modifications required?

Quality

- On completion, did the product meet client specifications without additional work? If additional work was required, specify.

- How could the quality of the product be improved?

Tools and techniques

- What tools and techniques have been developed through this project that will be useful in future projects?

- What did I learn about processes that will help in my next project?

Human resources

- What professional development has occurred through this project?

- What lessons did I learn about working with members of my project team? For example, with multimedia staff, instructional designers, project coordinators, or the project manager.

- What lessons did I learn from working with writers and subject matter experts?

- Was the level of expertise required available?

- What did I learn about staffing that will help me in my next project?

- How was the quality of work monitored? How can this be improved?

Overall

- If there was an opportunity to repeat the project, what would I do differently? List recommendations and suggest strategies for their implementation.

- What recommendations do I have for future research and development?

Evaluate the resource: Four levels of evaluation

It is important to compare the effectiveness of the resource or resources against the original expectations or requirements for the learning. To do this, you will need to consider the original objectives for the learning, which you determined in the planning and analysis phase. Consider the following questions:

- What were the needs of the learners?

- What were the needs of the client?

TAEDES502A Design and develop learning resources
Page 62 of 89
1st edition version: 2

- What were the learning objectives?

- What were the business outcomes, if any, expected as a result of the training or use of the resource?

    ○ How many staff were required, for external compliance or licensing, for example, to be competent in a particular job skill?

    ○ What behaviour was expected on the job as a result of the training or use of the resource?

    ○ What was the expected return on investment?

One useful and highly influential model for evaluating the effectiveness of training strategies, programs or resources is the Kirkpatrick model. The model was developed in the late 1950s by Donald Kirkpatrick, an American Academic at the University of Wisconsin.

The four levels described in the model are:

1. Reaction

2. Learning

3. Behaviour

4. Results.

The first level, reaction, evaluates the effect of the learning on the learner. Consider whether the learners enjoyed the program and whether they feel it was effective for them. A useful tool for gathering evidence for evaluation of the first level is the learner feedback form, commonly distributed at the end of training programs.

The second level, learning, evaluates the effectiveness of the resource in improving the level of knowledge, or bringing the learner to the appropriate level of skill to be determined competent in a particular employment context. Assessment tools include written tests, observation, project work, etc.

The third level, behaviour, considers the actual application of the learning on the job. Note that learners may pass an assessment (second level) in a classroom setting or simulated environment and still not be willing or able to apply skills and knowledge to their work. Tools for the third level include observation, interviews of employee managers and performance management reviews.

Finally, the fourth level, results, is primarily concerned with the effect on the learner's success as a result of the training, or the effect on the business's achievement of goals and/or the bottom line, including return on investment. Did the learner achieve employment or promotion as a result of the training? Did the business improve sales revenue as a result of employee sales training? Tools for evaluating results include interviews, budget reports and financial statements.

Kirkpatrick's seminal ideas were originally published in 1959 in a series of articles for the Journal of the American Society of Training Directors. Since that time, the Kirkpatrick model has become widely used in business and management contexts.

Note that the model has undergone some revision by Kirkpatrick himself. For your further study, the most recent version of Kirkpatrick's model is explained in detail in his book *Evaluating Training Programs: the Four Levels* (2006). The book includes several case studies describing the model's application. You may also wish to read:

- Kirkpatrick, D., 2008, *Seven keys to unlock the four levels of evaluation*, available online at: Scribd, viewed August 2012, *<http://www.scribd.com/doc/7841600/Donald-Kirkpatrick-7-Keys-to-Unlock-4-Levels-of-Evaluation>.*

Reflection on this learning resource

You may wish to review some of the learning topics in this resource. Review the diagrams used in this resource or the examples provided.

In summary, some important tasks of your job as a designer are to:

- keep your target audience (learners) and their needs in the forefront of your thoughts throughout the design stages

- work through the design stages, communicating with the key people who will influence your decision-making

- write in an interesting and varied way in order to maintain your learners' interest

- keep your resource as relevant as possible to your learners' industry and learning environment

- gather feedback and review it throughout the stages of design

- base your design decisions on sound educational knowledge and incorporate the needs of your client.

You are now ready to complete **Activity 12: Process Evaluation** *in the Application section of this workbook.*

TAEDES502A Design and develop learning resources
Page 64 of 89
1st edition version: 2

Application

Activity 1: Links Between Theory and Practice

Read the following examples then answer these questions:

- What theories do the examples relate to? Does either approach demonstrate an understanding of andragogy?
- Which learning theory most influences your thinking about how adults learn?

Example 1

The trainer is starting a new unit in a numeracy course with mainly 18–19 year-olds and a few mature age learners (late 20s). The trainer wants the learners to understand and apply basic skills in money management.

He asks the learners how much they spend on items such as lunch, transport and text messages per day. When they come up with a figure, he then asks them to calculate this on a weekly basis and then multiply it by 52 to get the approximate sum spent per year. He asks them to calculate how long they would need to save up $5,000.

Then he poses a question to them: If they had invested that $5,000 at age 20, what would they have at age 30, given a specified interest rate?

Then he presents other questions such as if you added $1,000 per year over the ten years, how much would you have?

(This initial exercise leads into a discussion of various types of investments and their likely outcomes.)

Example 2

A trainer has a group of truck drivers who have to learn to drive a new fleet of very expensive articulated road trains on long distance interstate and intrastate trips.

He develops a computer-based learning program which demonstrates 30 key points they have to learn before they can safely and effectively operate the new trucks. The learners work individually or in groups in a computer lab and run through the 30 points which have been grouped under five headings and include animated graphics showing the correct techniques.

When the learner believes they have learned the information, they can attempt a series of multiple-choice questions on the computer for which they get immediate feedback — a loud cheer if they are correct and a 'raspberry' sound if they are wrong.

They cannot move through the sets until they have fully mastered each one in the sequence established by the trainer.

Activity 2: Instructional Design Models

1. Research at least two well-known instructional design models. You can use the following listed resources as starting points for your research, or locate sources yourself.

2. Answer the following questions in relation to the two instructional design models:

    a. What are the similarities?

    b. What are the differences?

    c. Does any model look more appropriate for you than others?

    d. Does any model relate to the step-by-step instructional design process described in this learning topic?

3. Construct a diagram or list the key components of the model that best fits with the process you will use in developing your learning resources.

Resources

- Briggs, L., Gustafson, K., and Tillman, M., 1991, *Instructional design: Principles and application,* 2nd edn, Educational Technology Publications, New Jersey, available online at: *Google Books,* viewed August 2012, *<http://books.google.com.au/books>*.

- Devilee, A., 2008, 'What is instructional design?', *Instructional Design Australia*, viewed August 2012, *<http://instructionaldesign.com.au/>*.

- Grabinger, S., Aplin, C., and Ponnappa-Brenner, G., 2007, 'Instructional design for sociocultural learning environments', *E-Journal of Instructional Science and Technology*, University of Southern Queensland, viewed August 2012, *<http://www.ascilite.org.au/ajet/e-jist/docs/vol10_no1/papers/full_papers/grabinger.htm>*.

Activity 3: Stakeholders

1. Consider the learning resources you will be developing as part of your assessment for this unit. The consultative arrangements you need to put in place will depend on a number of factors, for example:

    a. a large externally-funded project may require a steering or advisory committee, comprising representatives of the funding body

    b. a community or industry-oriented project may require input from employers who employ course graduates

    c. projects relating to a range of workplaces may require input from professional associations or trade unions

    d. valuable input from past or current learners enrolled in the relevant program may be valuable.

2. Identify the best way to access input from stakeholders, including any formal consultative structures you may need to put in place.

3. Identify relevant stakeholders for your project, including contact details, proposed method of consultation, and reason for their inclusion or expertise.

4. Comment on:

    a. how you will maintain a good working relationship with the stakeholders

    b. any issues or conflicts of interest which may arise

    c. the processes you will establish to maintain communication.

Activity 4: Analysis Proforma

Design a proforma to use during the analysis stage of your resource design. As a starting point, use the questions in the 'Resource requirements' section in Topic 3, together with the questions from Appendix 1: Design Specifications Checklist.

As you read through the information in this section, you may wish to come back to this activity and keep adding to your list of questions.

Keep in your resource kit a list of questions you ask during this analysis stage, as you will refer to this and modify it for each resource you develop in the future.

TAEDES502A Design and develop learning resources
Page 70 of 89
1st edition version: 2

Activity 5: Language, Literacy and Numeracy

What are the language, literacy and numeracy requirements of the learners in your practice environment?

1. Analyse the language, literacy and numeracy requirements in a training package or accredited course unit that is relevant to your learning resource. Can you align these to the ACSF? Look at the following resource for guidance:

    a. Queensland VET Development Centre, 2011, *The crux of the matter: Language literacy and numeracy and vocational education and training*, The State of Queensland, Department of Education and Training, viewed August 2012, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>*.

2. What are some of the characteristics of the learners who are the likely to be users of your resource? Would you anticipate any language, literacy and numeracy issues with this group in relation to the unit?

3. Using the ACSF as a guide, at what level would you design the resource? What are the text features at this level?

4. Do you need help from a language, literacy and numeracy expert with this activity? Keep a record of language, literacy and numeracy experts who can help you, and any documentation you could use for future reference.

Activity 6: Relevant Personnel

List the relevant people and identify who will be involved in the analysis stage of designing your resource.

It is important to maintain a good working relationship with these colleagues if they are to support you in your project. Explain how you would organise communication to enable a smooth and quality-assured process, documenting this in your resource kit.

TAEDES502A Design and develop learning resources
1st edition version: 2
Page 72 of 89

Activity 7: The Work Schedule

Design a work schedule for the resource to be developed. Your work schedule should list the tasks you need to complete. Assign these to a timeline (which will be an estimate at this stage). You may wish to model your work schedule on the example provided or you may choose to design something more suitable for your own requirements. Keep a copy of this work schedule in your resource kit as it may be useful in future resource development projects.

Activity 8: Resource Outline

Design an outline for a resource to be developed. Present the outline in whatever format you prefer. Cover the following points.

1. How have you ensured you have met the requirements of the client in your planning?

2. If your resource is a support material for a specific unit of competency then you should refer to your training package and the unit in detail. How have you ensured you have met the requirements of the training package/accredited course/unit of competency in your planning, (or, if not relevant, to the other specific learning program outcomes)?

3. How have you ensured that you have met the requirements of the contexts of application? You can get information from documents, forms and procedures from the client's/learners' organisation, industry information, and information from other resources you have found. Information may have come directly from experts, management or employees.

4. How have you ensured that you have met the needs of the likely target audience? Include any research into the learner group, including possible LLN needs, and indicate how your resource will accommodate these.

5. The resource that you are developing may fall logically into a progression of topics and subtopics that can form the basis of your outline. Alternatively, you might develop the assessment tasks first and then build learning activities or topics that lead to assessment.

6. Decide how the information in the resource will be presented. It may be 'chunked' into sections with activities throughout. There could also be readings, separate to the learning activities. Will it be based on a particular instructional design model or learning theory?

7. Your outline should include assessment ideas and any underpinning skills and knowledge that are needed. Will the assessment tasks go at the front, or the back, or will they be spread throughout?

8. How and by whom will the work be completed? Have you drafted a work schedule?

Show your outline to your facilitator and the client (if relevant) for feedback. Ensure you have their support before proceeding to the next stage of developing the resource.

Activity 9: What Makes a Good Resource?

Part A

Review the Universal Design Checklist (see the Universal Design Checklist resources in Appendix 3). Discuss with colleagues how the advice provided may be helpful when reviewing and developing resources.

Part B

Find three learning resources that have been written for your industry area. Critique the instructional design techniques used in these resources, using the Universal Design Checklist. Note their good design points and those that could inhibit the learners from interacting effectively with the resource.

Discuss or share your critique with your facilitator and colleagues.

What ideas can you use or adapt for your learning resource?

Activity 10: Resource Development

Develop resources (whole or partial) that you can use now or in the future with learners in your practice environment. You will need to discuss with your facilitator what you will develop as evidence *for your own assessment*. Examples of possible types of resources include:

- classroom notes, handouts or activity sheets

- assessment tasks

- a self-paced work booklet

- course notes with activities.

What you develop should demonstrate that:

- specific requirements for the different work contexts of your learners have been addressed in the resource

- learning activities are used to engage and interest the learner

- the resource is formatted using appropriate layout techniques

- assessment requirements are included in the resource, if relevant.

Also explain how:

- language, literacy and numeracy requirements were checked and dealt with in the resource

- you reflected on your work-in-progress

- you communicated with key personnel throughout the resource development stage to ensure the resource contained accurate and relevant information.

Activity 11: Resource Review

Your final draft needs to be reviewed against the brief and other relevant criteria to ensure it meets requirements. Conduct a review of a resource you have designed. Describe how you reviewed the resource you developed and include information about:

- who participated in the review

- what methods were used; provide examples of review tools you designed

- what guidelines were given to the reviewers; provide examples

- how the feedback was collated; provide examples

- how you incorporated the feedback you received; if there was feedback you decided to not act on, give reasons why

- how you would modify your review processes next time you review a resource.

You may present your review findings in a report, or share your findings with a group and present a summary report to your facilitator.

Activity 12: Process Evaluation

The design model presented in this resource can be modified to best suit your design requirements.

1. Take time to reflect on the process you followed to design a resource.

2. Identify areas for improvement. Report on what you would keep doing the next time you develop a resource (because it worked well or was appropriate) and what you would do differently next time (to improve your process).

3. Adapt the evaluation questions to create a form to be used for evaluating the design and development process. Use this form to gather feedback from the project team.

4. Present a summary of your evaluation findings as a report to your team, colleagues, manager or facilitator. It may be useful to include recommendations for future practice.

5. In Topic 1, we looked at the knowledge and skills required by a resource designer. You may wish to review this section and document in your resource kit the challenges you have dealt with in relation to particular tasks in the process. Give examples of the skills you have demonstrated while working through the steps in the design process.

6. Use a journal to record your personal experience and your reflection on the critical success factors.

Appendices

Appendix 1: Adult Language, Literacy and Numeracy Teaching Theories

In theory there is no difference between theory and practice. But, in practice, there is.

– Jan L. A. van de Snepscheut

This topic outlines the main theories and methodologies underpinning adult LLN teaching and the readings and activities encourage you to explore how these might translate into practice.

This topic covers the following content:

- adults as learners

- an examination of cultural and social functions of LLN

- choosing and applying theory to practice – a 'bower bird' approach.

The purpose of this section is not to have you learn the theory for its own sake but to examine the theories and decide which ones you will use – in light of the learners you are interacting with and challenges you face in your practical day-to-day work.

Your delivery context

Depending on the cohort of learners you teach and the delivery context, the information and readings presented in each part will be useful to you in a variety of ways.

Adults as learners

Like children, adults bring a range of knowledge, experience and skills to learning. They also have a concept of themselves as learners. However, the life experiences of adults mean they bring considerably more to the learning experience– more knowledge, more experience, more skills, more opinions and a clearer view of themselves as learners. This may facilitate or hamper learning depending on the types of experiences, skills, knowledge and so on; they bring to the learning experience. Adults also have a number of competing demands on their time – such as family, work or community commitments, which may interfere with learning.

Adult learners in the Australian context

Adult learners in the Australian context bring to the classroom a diverse range of language backgrounds, educational experiences and purposes for learning. This diversity can include learners from backgrounds including those listed below.

- Adults from English-speaking backgrounds who have grown up speaking only Standard Australian English (SAE) or a regional variety of SAE with little formal education, including those who may have a negative view of 'education' or limited literacy skills and learning skills.

- Adults who are speakers of Aboriginal English and Indigenous speakers of creoles for whom English is an additional language.

- A range of adults with language backgrounds other than English. The dimensions of diversity in this group include: recently arrived migrants and refugees; people from settled communities which have been in Australia for some years; varying levels of literacy from people who are highly literate in their first language to those who are from mainly oral cultures, and those who initially develop English literacy skills that are stronger than their English oracy skills; varying levels of education in Australia and overseas; age; gender; intergenerational language issues; aspirational and motivational differences.

These learners will have different starting points, different needs in relation to learning, different language and literacy needs and focus. Each will bring cultural understandings about language and learning and the social practices of reading, writing, using numeracy and working with text.

The adult learning principles outlined here underpin adult education, whether the context is adult literacy, numeracy, information and communication technology (ICT) skills or horticulture.

Adult learning principles and practice

Malcolm Knowles pioneered the field of adult learning and interprets the term 'andragogy'. He identified the following characteristics of adult learners:

- Adults are *autonomous and self-directed*. They need to be free to direct themselves. Their teachers must actively involve adult participants in the learning process and serve as facilitators for them.

- Adults have accumulated a foundation of *life experiences and knowledge* that may include work-related activities, family responsibilities, and previous education. They need to connect learning to this knowledge and experience base.

- Adults are *goal-oriented*. On enrolling in a course, they usually know what goal they want to attain.

- Adults are *relevancy-oriented*. They must see a reason for learning something. Learning has to be applicable to their work or other responsibilities to be of value to them.

- Adults are *practical*, focusing on the aspects of a lesson most useful to them in their work. They may not be interested in knowledge for its own sake.

- As do all learners, adults *need to be shown respect*. Instructors must acknowledge the wealth of experiences that adult participants bring to the classroom.

An assumption in Knowles' work is that self-directedness is an innate characteristic of adults. But practitioners working in adult language, literacy and numeracy contexts recognise that they need to actively assist many adults to move from being dependent to independent learners.

Research task: From pedagogy to andragogy
Knowles' work has been critiqued and extended by other theorists, such as Brookfield and Mezirow, in order to clarify his ideas and bring practical application to them. Find one or more articles that discuss Knowles and other similar theorists and answer the following questions. 1. What practical tips can you derive from the articles' analysis of adult learning theory that you might apply in your practice? How might you assist learners to develop self-directed learning skills? 2. How do the points in the articles relate specifically to learners seeking to improve their LLN skills? How to they relate to your learner cohort? 3. If you are working with recently-arrived adult English language learners or with Indigenous learners of English as an additional language, how do these adult learning theories apply to these groups of learners? 4. What other considerations, if any, need to be made – are there other dimensions to learning influenced by cultural understandings or settlement experiences? How may these learners' languages help in development of English language skills?

Essential reading

- Brookfield, S. D., 1991, *Understanding and facilitating adult learning*, John Wiley & Sons.

- Lieb, S., 1991, 'Principles of adult learning', *VISION*, Fall, 1991, available online at: Merlot Pedagogy, viewed August 2012, *<http://pedagogy.merlot.org/AdultLearners.html>*.

Developing a perspective on teaching adults

In her article, *Four adult development theories and their implications for practice*, Baumgartner explores the relevance of adult development theories and models on the practice of adult basic education. She contends that each practitioner's theory or philosophy of adult development informs their teaching practice.

For example, she says:

> *… if we believe that people mature by passively absorbing knowledge and reacting to their environments, our instruction differs from that of teachers who assume knowledge is constructed and that development depends on active participation with the environment.*[6]

Baumgartner discuss several approaches to adult development and their related implications for instruction. The four adult development theories she examines are:

- behavioural/mechanistic
- cognitive/psychological
- contextual/sociocultural
- integrative.

Research task: Where do you stand?
Read Baumgartner, 2001, *Four adult development theories and their implications for practice,* available online at: *National Center for the Study of Adult Learning and Literacy,* viewed August 2012, *<http://www.ncsall.net/index.php?id=268>*. 1. Examine each of the four adult development theories outlined in Baumgartner. 2. Which one best matches your own philosophy of teaching? 3. What are the implications of your alignment with this approach to your teaching and assessment practice? 4. Does the context in which you practice affect the philosophy you adopt and practice? 5. Discuss with colleagues.

Developing a perspective on teaching adult learners of English as an additional language

In light of the four development theories outlined in the article Baumgartner, discussed above, consider the following.

According to Paton and Wilkins:

> *It is important to value multiculturalism as an asset to learning and cognitive development, and to recognise the complexity of the process involved in acquiring an additional language with its implications for motivation, self-esteem and identity as well as for personal development and growth in confidence.*[7]

---

[6] Baumgartner, L. M., 2001, *Four adult development theories and their implications for practice,* available online at: *National Center for the Study of Adult Learning and Literacy,* viewed August 2012, *<http://www.ncsall.net/index.php?id=268>, p.1.*

[7] *Paton, A., and Wilkins, M., 2009, Teaching Adult ESOL: Principles and Practice, McGraw-Hill, Berkshire, UK.*

Mitchell and Myles point out that there is:

A mismatch in power relations between any teacher and his/her learners and the way in which this may be accentuated by the ability of those who control the classroom discourse through language, simultaneously acting as 'gatekeepers' to the social goods and services of the dominant society.[8]

Consider some of the ways in which you may 'value multiculturalism' in the adult classroom.

Consider the power relations in the adult language classroom. How do you see your role in meeting the cultural and linguistic needs of English language learners?

Essential reading

- Baumgartner, L. M., 2001, 'Four adult development theories and their implications for practice', *Focus on basics*, vol. 5, Issue B, October, viewed August 2012, <http://www.ncsall.net/?id=268>.

Further reading for this section

- Barton, D., 2006, 'A social perspective on language, literacy and numeracy', *Reflect*, Issue 5, available online at: National Research and Development Centre for adult literacy and numeracy, viewed August 2012, <http://www.nrdc.org.uk/content.asp?CategoryID=1027>.

- Foley, G. (ed.), 1995, *Understanding adult education and training*, Allen and Unwin, St. Leonards, NSW.

- Knowles, M. S., 1980, *The modern practice of adult education: From pedagogy to andragogy*, 2nd edn, Cambridge Books, New York.

- Mackeracher, D., 2004, *Making sense of adult learning*, 2nd edn, University of Toronto Press Incorporated, Toronto.

- Merriam, S. B and Caffarella, R. S. and Baumgartner, L. M., 2007, *Learning in adulthood. A comprehensive guide*, 3rd edn, John Wiley & Sons, San Francisco.

- Brookfield, S., 1989, 'Myths and realities in adult education', *RaPal Bulletin,* no. 10, Autumn.

- Brookfield, S.D., 1995, 'Adult learning: An overview' in Tuijnman, A. (ed), *International encyclopedia of education*, Pergamon Press, Oxford, available online at: MA Distributed Learning, viewed February 2011, <http://www.digitalschool.net/edu/adult_learn_Brookfield.html>.

- Conner, M.L., 'Introduction to Adult Learning', *Marcia Conner*, viewed August 2012, <http://www.agelesslearner.com/intros/adultlearning.html>.

- Fenwick, T., and Tennant, M., 2004, 'Understanding adult learners' in Foley, G. (ed.), *Dimensions of adult learning: Adult education and training in a global era,* Allen and Unwin, Crows Nest, NSW, pp.55–73.

---

[8] *Mitchell, R., and Myles, F., 1998, Second language learning theories, Arnold, London.*

- Smith, M.K., 2002, 'Malcolm Knowles, informal adult education, self-direction and andragogy', *The Encyclopedia of Informal Education*, viewed August 2012, *<http://www.infed.org/thinkers/et-knowl.htm>*.

- Niks, M., Allen, D., Davies, P., McRae, D., Nonesuch, K., and Rogers, A., 1986, *Teaching adults*, Open University Press, Milton Keynes.

TAEDES502A Design and develop learning resources
Page 86 of 89
1st edition version: 2

Appendix 2: Design Specifications Checklist

Purpose of the resource

- What is the resource required to achieve? For example, to fill a gap between existing learner skills and required skill level.

- What are the learning needs? That is, goals, objectives, competencies (skills, knowledge).

- What will the learner be able to do when they have worked through the resource?

- How does the client perceive the end effect or outcome?

Resource type

- Is the resource related to:

    ○ one or more units of competency from a training package

    ○ an accredited course

    ○ a non-accredited course

    ○ a work activity?

- Should the resource have activities that help with assessment?

- Who are the resources for?

- What types of resources are needed?

- What types of media would be appropriate?

Target audience

- Who will the resource be for?

- What are the learners' characteristics?

- What will be most useful to them?

- What will make it easy for them to learn what is required?

- How can the resource engage, interest and motivate learners to acquire new skills and knowledge and enhance their learning?

Learning contexts

- In what context will the resource be used? For example, the workplace, a simulated environment, a classroom, by distance learning, or a range of contexts.

Timeframe and budget

- How much time do you have to design, develop and evaluate the resource?

- How much money do you have to design, develop and evaluate the resource?

Project team

- Who will the project team consist of and what will be their roles and responsibilities?

Evaluation

- Who will determine if the resource meets the required need? How will these people be involved?

Consider

- Can you add to this design specifications checklist?

Appendix 3: Useful Resources

Universal Design Checklist resource

- 'Resources and Tools' *Queensland Department of Education, Training and Employment*, viewed August 2012, *<http://training.qld.gov.au/information/equity-diversity/resources-tools/>*.

Resources for inclusivity

See the Queensland Government Department of Education and Training website *<http://training.qld.gov.au/information/equity-diversity/resources-tools/index.html>* for the following useful *resources*, including:

- Disability Type factsheets, *<http://training.qld.gov.au/information/equitydiversity/resources-tools/>*.

- *Reasonable Adjustment in teaching, learning and assessment for learners with a disability - a guide for VET practitioners*, *<http://training.qld.gov.au/resources/information/pdf/reasonable-adjustment-for-web.pdf>*.

- The Crux of the Matter 2011: Language, Literacy and Numeracy and Vocational, Education and Training, *<http://training.qld.gov.au/resources/information/pdf/crux-matter-june-2011.pdf>*.