Developing Competency Based Curriculum Modules

HUMAN RESOURCE DEVELOPMENT DIVISION

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Developing Competency Based Curriculum Modules

A Guidebook for TAFE Teachers and Curriculum Writers

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Competency based training is an approach to vocational training that emphasises what a person can actually do in the workplace as a result of education and training. It is concerned with training to specified industry standards rather than a person's achievement relative to other people.

Competency standards set down the knowledge, skills and behaviour required to perform jobs. They are comprehensive descriptions of what a person needs to know and do to be considered a competent worker in a job or position. They describe how well and under what range of conditions a competent person should be able to perform the roles and functions of a job, and the criteria against which their performance of these competencies can be assessed.

Competency standards, based on current and future industry needs, provide the basis for curriculum development, education and training delivery, and assessment methods.

A competency based curriculum is a curriculum based on competency standards developed by industry, an enterprise or the community. It specifies the expected learning outcomes, the assessment criteria for those learning outcomes, the knowledge, skills and behaviours to be developed, and the methods and strategies for assessment of the learners' achievements.

This book is a training program that will help you to develop competency based curriculum modules; that is, modules in vocational education programs that are based on, and related to, industry competency standards. The program will explain what competency standards are, and show you how to develop a curriculum module that relates to these competency standards. You will learn how to develop educational learning outcomes, how to specify assessment criteria for these learning outcomes, how to choose appropriate methods for assessing learning achievement, and how to select an appropriate assessment strategy for the module. You will be able to suggest suitable knowledge, skills and behaviours to be developed during delivery of the module, and recommend how the module content could be taught and learned.

There are many approaches to curriculum development. This program presents one way that has proved to be successful for developing vocational education programs. A competent curriculum developer should be able to produce a curriculum that can be interpreted clearly by teachers and learners, that can be implemented within the constraints that are applied to it, that achieves what it sets out to achieve, and one that can be evaluated appropriately. This program, is intended to help you to develop competency based curriculum modules.

Barry Porter

May 1993
Acknowledgments

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We acknowledge use of material from National Competency Standards Policy and Guidelines (The National Training Board, 1992), User's Guide to Course Design for Competency Based Curriculum (Vocational Education, Employment and Training Advisory Committee, 1992), CBT: How's It Done? (TAFE NSW, SSAB WA and DEVET WA, 1992), CBT: Assessment Models appropriate for Competency Based Training and their Relationship to Teaching and Learning Approaches (Research and Development Division, Office of Vocational Education, Training and Employment Commission, Queensland, 1991) and Competencies for Farming: A Compendium of Profiles (Rural Development Centre, University of New England, Armidale NSW, 1991), other publications listed in the bibliography, and various anonymous or unidentified sources who have contributed to the competency based education and training debate.

This program is available as a workshop. The Facilitator's Manual has been produced by the Human Resource Development Division (HRDD), NSW TAFE Commission, Level 1, Tower A, Zenith Centre, Railway Street, Chatswood, NSW 2067; telephone (02) 413 0800, fax (02) 413 0888.

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Developing Competency Based Curriculum Modules

Program Outcome

TAFE teachers and consultants who complete this program will be able to produce syllabuses and teaching guides for competency based modules in vocational education courses.

Learning Outcomes

By satisfactorily completing this program, TAFE teachers and consultants will be able to:

1. Produce a plan for writing a syllabus and teaching guide.
2. Identify industry competency standards that the curriculum module will address.
3. Develop a syllabus for a competency based module.
4. Recommend suitable methods and strategies for assessing learner achievement.
5. Suggest module content that is appropriate to the learning outcomes of the curriculum module.
6. Recommend appropriate learning strategies, teaching methods and resources to achieve the learning outcomes of the curriculum module.
7. Summarise the curriculum development process presented in this program.
About this Program

Purpose

This program provides competency based training for TAFE teachers and consultants in developing curriculum modules for vocational education programs.

Participants who complete this program will be able to produce a syllabus and teaching guide for a competency based module in a vocational education course.

Relationship to Standards

The learning outcomes achieved by completing this program relate to Competency Standard 2, 'Design and Develop Training' of the 'National Industry Competency Standards for Workplace Trainers' approved by the National Training Board on 10 April 1992.

The program relates also to the function of 'Curriculum Design and Development' identified by the 'Review of the TAFE Teacher Education Program', TAFE NSW August 1989, and by the VEETAC 'Working Party on TAFE Staffing Issues', May 1992.

The learning outcomes of this program align with Levels 6-7 of the Australian Standards Framework.

Entry Competencies and/or Prerequisite Programs

Participants in this program should have broad knowledge and understanding of current issues in the National Competency Based Education and Training System. Preferably, they should have completed an introductory program on competency based education and training.

Concurrent and Complementary Programs

Participants who complete this program can develop their knowledge and skills further by completing programs that address competency based course design, competency based assessment and competency based course delivery.

Recognition of Prior Learning

As this is a short human resource development program for people who wish to improve their ability to develop competency based curriculum modules, recognition of current competence in the learning outcomes is not appropriate.
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Acronyms

Appendix 2: Program Worksheets

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1 Planning the Module Development

Learning Outcome

By completing this unit, you will be able to produce a plan for writing a syllabus and teaching guide.

Assessment Criteria

To show that you have achieved this learning outcome, you must be able to:

1. Define the terms *curriculum*, *syllabus* and *teaching guide*.

2. State the purpose of a syllabus and a teaching guide.

3. Explain the place of the syllabus and teaching guide in the curriculum development process.

4. Describe the content of a useful teaching guide.

5. Relate the teaching guide to the teaching process.

About this Unit

In this introductory unit, you will review some relevant terminology and a suggested method of curriculum design. The unit gives you a framework on which to build the subsequent units.
A Curriculum Development Process

Before beginning development of a curriculum module, you need to be clear about what is meant by some of the terms used and to examine the place of the syllabus and the teaching guide in the whole process of curriculum development.

Curriculum is defined in different ways by educators because they have different perceptions of what a curriculum should be. However, there is general agreement that a curriculum is a document for teachers, learners, employers and assessors, that includes

- some formalised learning
- intended learning outcomes
- structure and activities to assist learning.

A curriculum is a plan for learning that incorporates a structured series of intended learning outcomes and associated learning experiences. In this book, curriculum means

- a structured series of intended learning outcomes and associated learning experiences organised as an integrated combination of modules and the experiences that learners encounter when the curriculum is implemented, so that learners can achieve identified vocational outcomes.

A syllabus is a description of

- the material that people are to learn to achieve stated outcomes, and how their learning achievements will be assessed.

This is the document that is used to accredit a course and its component modules.

A teaching guide

- describes how teachers can help their students to learn and achieve the stated outcomes.

The teaching guide includes
The teaching guide is an extension of the syllabus, and both are part of the 'curriculum'.

A Model for Curriculum Development

The curriculum development process is usually presented as a model that shows how the parts of the process relate to each other. Probably there are as many models of curriculum development as there are definitions of curriculum but this book presents a clear, logical and sequential model that is suitable for TAFE teachers to use when developing modules.

The model is based on three sequential phases: organisation, development and application.

The organisation phase, or curriculum presage stage includes:

- selecting people who will develop the curriculum, their experiences and expertise, and how they will influence the curriculum
- identifying the competency standards, or job roles, functions and skills, that will be addressed by the curriculum.

The development phase includes:

- determining what should be included in the curriculum and producing the curriculum documents and materials

and follows a cyclical sequence:

- situational analysis → purpose → learning outcomes → assessment criteria → conditions → assessment method → content → delivery methods → learning strategies → learning resources → assessment strategies → situational analysis

Producing the syllabus and teaching guide is part of the development phase of curriculum development.

1. Planning the Module Development
The application phase includes:

- implementing the curriculum, monitoring the curriculum implementation and providing feedback to those responsible for the curriculum.

A syllabus and teaching guide produced in this way follows the teaching process. Some teachers concern themselves with "What will I tell my students?" without considering all the other elements in the teaching process. The syllabus and teaching guide should provide information about:

1. **The purpose of the module**

   This is a broad description of what the learners are going to be able to do, and why they are learning to do it. It should relate the knowledge and skills to be learnt to the learner's job, future vocation or position, or a later module.

2. **The learning outcomes**

   These are the intermediate steps in achieving the purpose of the module.

3. **The assessment criteria**

   What criteria must learners satisfy to show that they have achieved the learning outcomes?

   How will teachers be able to tell that the learners have achieved the learning outcomes?

   How will learners be able to tell that they have achieved the learning outcomes?

4. **The learning content**

   What knowledge, skills and behaviours do learners need to learn so that they can satisfy the assessment criteria?
5. The teaching methods and learning strategies

What methods will teachers use to teach the learners?

What strategies will learners use to learn this knowledge, skills and attitudes?

Will learners listen to what they are told, or discover something for themselves?

How will learners be guided to achieve learning?

6. The learning resources

What aids, materials, and equipment will learners need to help them learn?

Will learners need equipment for practical work, case studies to discuss, charts and visual aids, models, library access?

7. The assessment

How will teachers know how well learners have learned what they were intended to learn?

What will learners do to show teachers, and themselves, that they have succeeded in learning?

If teachers know what learners are expected to be able to do, they can plan, prepare and present learning activities and check how well students can do what they are supposed to be able to do. Planning, preparing and presenting a learning activity involves following the teaching process. It is much more efficient if the syllabus and teaching guide also follow the teaching process.

While the teaching process is presented as a sequential process, development of the teaching guide is a cyclical process. Often, you will move backwards and forwards between the elements of the teaching process while you are writing the teaching guide.
Key Points

In this introductory session, you have identified

- the purpose of the syllabus and teaching guide
  - to guide teachers in what, when, how and why they are teaching
  - to help teachers guide learners in what, when, how and why they are learning

- the place of the syllabus and teaching guide in curriculum development
  - part of the development phase

- the content of the syllabus and teaching guide
  - learning outcomes, assessment criteria, content, teaching methods, learning strategies, learning resources, learner assessment.

During the rest of this book, you will work through each of these components and you will develop a syllabus and teaching guide as you progress.

An integral part of the curriculum development process is 'situational analysis', the process of examining the context for which a curriculum is being developed. Under the broad banner of award restructuring, the Australian workplace of the 1990's is being reformed to meet the demands of competitive world markets at a time of rapid technological change. The reform of Australia's vocational education system is based on delivering reliable outcomes through which people can achieve the standards of knowledge, understanding and skill required by the industry in which they work.

The syllabus and teaching guide that you are developing will be competency based.
2 Identifying Competency Standards

Learning Outcome
By completing this unit, you will be able to identify the competency standards, or skills, that the curriculum module will address.

Assessment Criteria
To show that you have achieved this learning outcome, you must be able to:

1. Explain what is meant by competency, key competency, vocational competency, competency standard, and competency based training.

2. Outline five major components of competency.

3. Describe a process for identifying competency standards, or job skills.

4. Identify the key competencies needed for training and further education.

5. Relate the Australian Standards Framework to competency standards and course curriculum.

About this unit
This unit gives you an overview of the concepts of skills analysis, competency standards and course design as the foundation for developing curriculum modules. It will help you to identify the competency standards that are relevant to the curriculum modules that you are developing.
Competency Based Training

To succeed internationally, Australia must be a skilled, customer-oriented and competitive supplier of high quality goods and services to the world. To do this, Australia needs education and training that is high quality, cost effective and user friendly. Before we can provide this education and training, curriculum developers must be clear about the needs that the curriculum is to address.

Vocational curriculum development, industry training, and the delivery and recognition of training in Australia, is based on the concept of competency.

Competency

What is competency?

Competence can be defined narrowly to mean the demonstrated capacity to do a specific task, and even more narrowly by specifying in detail the conditions under which performance of the task is to be demonstrated. When used in this way, competence is described in terms of skill and generally distinguished from knowledge and understanding.

The Macquarie Dictionary defines competent as properly qualified, capable, sufficient for the purpose, adequate. A broader definition of competence recognises that performance is underpinned not only by skill but also by knowledge and understanding, and behaviour, and that competence involves both the ability to perform in a given context and the capacity to transfer knowledge, skills and behaviour to new tasks and situations.

What distinguishes a competent person from someone who is not competent?

Think about a competent driver, a competent teacher, a competent builder, a competent manager, a competent artist. What do they do that makes them different from a poor driver, a poor teacher, a poor builder, a poor manager, a poor artist?

Competent people
- perform tasks well
- organise tasks within a job
• apply skills to related tasks
• solve problems when performing tasks
• deal with the responsibilities and expectations of the workplace

Competent people bring knowledge, skills and behaviour together, and use them appropriately in a range of situations. So, competency is specifying, combining and applying knowledge, skills and attitudes to perform functions to a required standard.

In the workplace, competency comprises specifying, combining and applying knowledge, skills and behaviour to the standard of performance required in employment in an occupation or industry level. It focuses on what is expected of an employee in the workplace rather than on the learning process, or how the person developed competence.

Competency includes all aspects of work performance, not just task specific skills. It includes:

• Task skills - performing individual tasks
• Task management skills - managing several tasks within a job
• Transfer skills - being able to apply knowledge and skills to new or changed situations
• Contingency management skills - responding to irregularities and breakdowns in routine
• Work environment skills - dealing with the situations, responsibilities and expectations of the workplace.

Example

A competent supermarket checkout operator can:

• Operate the cash register according to the store's procedures (Task skill)
• Manage the sales process (Task management skills)
• Work on the lay-by counter or act as relief checkout supervisor (Transfer skills)
Competency Based Training

- Deal with expired credit cards, inadequate change, power failure, or damaged packages (Contingency management skills)
- Handle difficult customers, or queues of customers at peak periods, or work as part of a team (Work environment skills)

Competency based training is learning and developing relevant knowledge, skills and behaviour, and applying them to carry out functions, at least to minimum industry standards.

Competency based training includes all aspects of work performance, including being able to:

- perform individual tasks at an acceptable standard
- organise several tasks within a job
- transfer and apply knowledge, skills and behaviour to new or changed situations
- respond and react to problems and difficulties in a job
- deal with responsibilities and expectations in the work situation and work with other people.

A learner’s achievement of competency is assessed against an industry competency standard rather than against other learner’s achievements.

Competency Standards

All accredited courses must be based on national competency standards. National competency standards define the competencies required for effective performance in employment.

A competency standard comprises

- knowledge, skills and behaviour needed in an occupation
- application of that knowledge, skills and attitudes
to the standard of performance required in employment.

Competency standards must be

- related to realistic workplace practices; that is, what competent workers actually do in their jobs

- expressed as outcomes; that is, the result of someone performing competently should make an observable difference from someone who is not performing competently

- understandable; to workers, their supervisors, and trainers.

Competencies and standards are set by industry groups - Competency Standards Bodies - and endorsed by the National Training Board. Where there are no existing national competency standards, courses must specify outcomes that have been determined with industry involvement and comply with the definition and principles of competency based training.

The National Training Board does not specify any particular way of developing competency standards, but they are based on a comprehensive skills analysis.

Suitable methods for identifying skills include:

- DACUM
- Nominal Group Technique
- Search Conference
- Functional Analysis
- Competency Interviews
- Critical Incident Technique
- Surveys
- Delphi Technique
- Observation

The principle of skills analysis is to break jobs into their component parts and to identify the underpinning knowledge, skills and behaviour needed to carry out each of the roles, functions, duties, and tasks that make up the job. For a specified job or industry level, this involves asking:

1. What are the key roles of a person in this position?
2. What functions does a person in this position need to do to carry out each of these roles?

Any complex functions should be broken down into less complex functions. List the knowledge, skills and behaviour needed to perform each function and identify where these are part of several functions. Do not generate unconnected lists of skills; group skills under each job function.

3. What criteria can be used to judge whether or not a person is carrying out each function to the standard of performance required in the workplace?

What is the difference between performing a function satisfactorily and performing it in an unsatisfactory way?

4. What different situations or conditions have to be taken into account when setting these performance criteria?

Each industry will need to decide whether the performance criteria apply in all situations, or whether different performance criteria apply in different situations. It may be appropriate to spell out a range of contexts, situations and conditions to which the performance criteria apply. These will guide the assessor of competency, or the developer of training programs, on the limits of application of the performance criteria.

The range of variables may apply to

- a particular technology or equipment
- particular sites or locations, or sites of different sizes
- occupational overlap between industries.

Example 1: A person in a small business enterprise

1. What is one key role of a person in this position?

A person in a small business enterprise:
- Monitors and evaluates business performance.
2. **What functions does a person in this position need to do to carry out this role?**

To monitor and evaluate business performance, a person in a small business enterprise needs to:
- monitor and evaluate the cash flow performance of the business
- evaluate performance of each of the business enterprises
- analyse and evaluate the overall profitability of the business
- compare business performance with business goals and objectives
- decide whether changes in management of the business are needed

3. **What criteria can be used to judge whether or not a person is carrying out this function to the standard of performance required in the workplace?**

When a business person monitors and evaluates the cash flow performance of a business:
- all cash costs and cash income are recorded
- records of cash income and costs are reconciled with bank statements each month
- actual cash income and costs are compared monthly and yearly with the cash flow budget
- differences between actual performance and budget are identified and analysed as a basis for future planning

4. **What different situations or conditions have to be taken into account when setting these performance criteria?**

- Size of enterprise; business structure

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**Example 2: A Taxi Cab Driver**

1. **What is one key role of a person in this position?**

A taxi cab driver:
- Delivers passengers to their destinations.
2. What functions does a person in this position need to do to carry out this role?

To deliver passengers to their destinations, a taxi cab driver needs to:
- Locate destinations
- Identify the most appropriate routes
- Integrate with local transport systems

3. What criteria can be used to judge whether or not a person is carrying out this function to the standard of performance required in the workplace?

When a taxi cab driver locates destinations:
- a given place, suburb, area, street, etc. is located quickly, using a street directory if necessary
- key geographic regions and features (e.g. rivers, mountains, beaches) are located
- major tourist attractions, shopping centres, industrial and business sites, etc. are located

4. What different situations or conditions have to be taken into account when setting these performance criteria?

- Metropolitan locations; country locations

Example 3: A Plant Nursery Operator

1. What is one key role of a person in this position?

A plant nursery operator:
- Produces nursery plants.

2. What functions does a person in this position need to do to carry out this role?

To produce nursery plants, a plant nursery operator needs to:
- propagate plants
- prepare sites for planting
• sow or plant crops
• assess plant performance
• maintain plant health and growth
• maintain site and soil condition
• manage plant pests, weeds and diseases
• maintain growing conditions in a controlled environment

3. What criteria can be used to judge whether or not a person is carrying out this function to the standard of performance required in the workplace?

When plant pests, weeds and diseases are managed correctly:
• protection methods appropriate to the situation are used
• protection methods that are cost effective and minimise environmental and human impact are used
• protection methods that comply with product and label specifications and accepted industry practice are used
• protection methods based on accurate diagnosis of plant protection requirements are used
• regulations and legislation relevant to the situation are observed

4. What different situations or conditions have to be taken into account when setting these performance criteria?

• Wholesale producer; retail operator

Example 4: An electrician who repairs small appliances

1. What is one key role of a person in this position?

An electrician who repairs small appliances:
• Follows occupational health and safety requirements associated with electrical work.
2. What functions does a person in this position need to do to carry out this role?

To follow occupational health and safety requirements associated with electrical work, an electrician who repairs small appliances needs to:
- identify legal and general requirements for a safe working environment
- recognise potential hazards and implement measures for dealing with hazardous events
- maintain the safety of the working environment

3. What criteria can be used to judge whether or not a person is carrying out this function to the standard of performance required in the workplace?

When an electrical repairer recognises potential hazards and implements measures for dealing with hazardous events:
- electrical hazards in the workplace (eg risk of electrical shock) are recognised and eliminated
- the need to control electrical hazards that cannot be eliminated from the workplace (eg water close to power outlet) are recognised
- ability to deal with chemical spills is demonstrated and any associated first aid is identified
- use of fire extinguishers to put out a range of fires that can occur in the workplace is demonstrated
- technique to treat a victim of electrical shock is demonstrated
- ability to treat electrical burns and other wounds is demonstrated
- cardio-pulmonary resuscitation techniques are demonstrated

4. What different situations or conditions have to be taken into account when setting these performance criteria?

- Domestic appliances; industrial appliances
Example 5: A TAFE teacher or workplace trainer

1. *What is one key role of a person in this position?*

A TAFE teacher or workplace trainer:
- Delivers and evaluates training programs.

2. *What functions does a person in this position need to do to carry out this role?*

To deliver and evaluate training programs, a TAFE teacher or workplace trainer needs to:
- deliver training and learning activities
- provide opportunities for practice
- follow up and support trainees
- evaluate training

3. *What criteria can be used to judge whether or not a person is carrying out this function to the standard of performance required in the workplace?*

When a TAFE teacher or workplace trainer delivers training and learning activities:
- training objectives are explained to all trainees
- how competencies are to be learned and assessed is explained clearly to all trainees
- presentation and training methods are appropriate to the trainees' backgrounds and aptitudes, and for the competencies to be developed
- training equipment and materials are used correctly and efficiently
- advice and feedback are provided to facilitate group and individual learning
- within the training plan, suitable opportunities and resources are provided for groups and individuals to manage their own learning

4. *What different situations or conditions have to be taken into account when setting these performance criteria?*

- Training structure; group size; training methodology; subject matter
The comprehensive skills analysis is used to develop the competency standards that describe required workplace performance. Competency standards are used for a wide range of human resource management activities, including education and training.

Competency standards are

- described in terms of the requirements of jobs, rather than the competencies an individual brings to the job
- developed by industries and express common agreed workplace requirements
- relevant to both current levels of work performance and anticipated work requirements for the foreseeable future.

Format of Competency Standards

For consistency across industries and ease of understanding, the National Training Board has decided that all competency standards will have the same format.

Competency standards for an occupation identify:

- key roles of the occupation in terms of outcomes, from which units of competence can be specified
- elements of competence that enable each key function to be achieved
- performance criteria for each element of competence
- a range of variables that spells out the situations and conditions to which the performance criteria apply
- an evidence guide that indicates how a person would be assessed as competent.

Units of Competence

The units of competence identify major competencies that are required in the job. They reflect the major roles or skill groups for the job.
Element of Competence

The elements of competence describe single skills, or related sets of skills, needed by a person who works in a particular area.

Elements of competence are logical, identifiable and discrete groupings of actions and knowledge that contribute to and build a unit of competence. They describe in output terms what a person working in a particular job must be able to do. They can be demonstrated and assessed.

Performance Criteria

The performance criteria are evaluative statements that specify the required standard of performance so that a person’s competency can be judged.

The performance criteria enable an assessor to judge the performance specified in the elements of competence to a level acceptable in employment.

Performance criteria provide a guide to assessment but do not specify the assessment. The principle is for the performance criteria to provide a link between the element of competence and the required evidence of achievement.

Range of Variables

The range of variables statements describe specific factors, variables and conditions that apply to different work places and environments, which may affect the performance criteria.

Range of variables statements may specify equipment to be used, manuals, procedures, likely client groups, legal or regulatory considerations, or the environment in which performance usually occurs.

Evidence Guide

The evidence guide is an optional part of a standard and where used, would be endorsed as part of the format of a standard. It would usually cover:

- contexts for assessment; such as types of environment or types of equipment required to establish competency.

- critical aspects of a unit and its relationship to other units; such as units needing to be assessed together
• the required evidence of competency; such as particular aspects of the knowledge or skill and their application of which evidence is required to establish competency. This could also be used to indicate the extent of sampling of evidence which could be undertaken.

Vocational Competencies

Competency standards describe *vocational competencies* that are specified by industry or enterprises. They are the knowledge and skills needed and used by people to the standard required for a particular job.

Key Competencies

There are seven *Key Competencies* that people need to enable them to participate effectively in the emerging forms of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key Competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that they Key Competencies are essential for effective participation in work, and for effective participation in further education and in adult life more generally.

The Key Competencies describe a person’s performance in a range of broad employment-related competencies which will provide the basis for

• effective participation in emerging forms of work and work organisation

• access to a range of education and training pathways, both initially and subsequent to entering employment

• improved flexibility and mobility in employment

• effective participation in adult life more generally.

Performance Levels

The performance standards for each of the Key Competencies are set at three levels.
# KEY COMPETENCIES

for effective participation in work and work organisation

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<th>Competency</th>
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<td>Collecting, Analysing and Organising Information</td>
<td>The capacity to locate, sift and sort information, in order to select what is required, present it in a useful way, and evaluate both the information and the sources and methods used to obtain it.</td>
</tr>
<tr>
<td>Communicating Ideas and Information</td>
<td>The capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.</td>
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<tr>
<td>Planning and Organising Activities</td>
<td>The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance.</td>
</tr>
<tr>
<td>Working with Others and in Teams</td>
<td>The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.</td>
</tr>
<tr>
<td>Using Mathematical Ideas and Techniques</td>
<td>The capacity to use mathematical ideas, such as number and space, and techniques, such as estimation and approximation, for practical purposes.</td>
</tr>
<tr>
<td>Solving Problems</td>
<td>The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome.</td>
</tr>
<tr>
<td>Using Technology</td>
<td>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</td>
</tr>
</tbody>
</table>

2. Identifying Competency Standards
Performance Level 1 describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgements about quality of outcome against established criteria.

Performance Level 2 describes the competence needed to manage activities requiring the selection, application, and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.

Performance Level 3 describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.

Australian Standards Framework

The Australian Standards Framework (ASF) is a set of eight competency levels, or common reference points, which broadly describes the full range of jobs that people do, above entry level into the workforce. The levels range from a competent operative worker to a competent senior manager or professional. The levels are intended to provide impartial benchmarks against which jobs can be aligned.

The purpose of the Framework is to ensure that the standards relate properly to the range of competencies required for particular jobs or industry levels, and to vocational education and training provided to help people develop competence. The Australian Standards Framework provides a bridge between the competency standards - the requirements of work, work structures and work practices - and the vocational education and training system.

The descriptors of each competency level do not describe all the attributes of a person working at that level, but describe only the characteristics necessary to distinguish one level from another. The main differences between the lower and higher levels are:
## AUSTRALIAN STANDARDS FRAMEWORK

<table>
<thead>
<tr>
<th>Level</th>
<th>Work Group</th>
<th>Work Method</th>
<th>Competency Descriptor</th>
<th>Competency Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Competent senior professional or manager</td>
<td>Work is likely to involve full responsibility and accountability for all aspects of the work of others, and functions including planning, budgeting and strategy where required.</td>
<td>Competency at this level involves self-directed development and mastery of a range of knowledge and skills. Application is to major functions, both broad and/or specialised within highly varied and/or highly specialised contexts.</td>
<td>Competencies are normally used with full independence and in contexts and combinations of great variability. The highest level of complex judgement is applied in planning, design, technical and/or management functions.</td>
</tr>
<tr>
<td>7</td>
<td>Competent professional or manager</td>
<td>Work is likely to be in accordance with a broad plan, budget or strategy. Responsibility and broad ranging accountability for the structure, management, and output of the work of others and/or functions may be involved.</td>
<td>Competency at this level involves the self-directed development and mastery of broad and/or specialised areas of knowledge with a range of skills. Application is to major, broad or specialised functions in highly varied and/or highly specialised contexts.</td>
<td>Competencies are normally used independently and are non-routine. Significant high level judgement is required in planning, design, operational, technical and/or management functions.</td>
</tr>
<tr>
<td>6</td>
<td>Competent senior administrator, specialist, technologist, or paraprofessional</td>
<td>Work is likely to be under limited guidance in line with a broad plan, budget or strategy. Responsibility and defined accountability or the management and output of the work of others and for a defined function or functions may be involved.</td>
<td>Competency at this level involves the self-directed development of knowledge with substantial depth across a number of areas and/or mastery of a specialised area with a range of skills. Application is to major functions in either varied or highly specific contexts.</td>
<td>Competencies are normally used independently and are substantially non-routine. Significant judgement is required in planning, design, technical or supervisory functions related to products, services, operations or processes.</td>
</tr>
<tr>
<td>5</td>
<td>Competent administrator, specialist, technologist, or paraprofessional</td>
<td>Work is likely to be under broad guidance. The work of others may be supervised or teams guided. Responsibility for the planning and management of the work of others may be involved.</td>
<td>Competency at this level involves the self-directed application of knowledge with substantial depth in some areas, and a range of technical and other skills to tasks, roles, and functions in both varied and highly specific contexts.</td>
<td>Competencies are normally used independently and both routinely and non-routinely. Judgement is required in planning and selecting appropriate equipment, services, techniques and work organisation for self and others.</td>
</tr>
<tr>
<td>Level</td>
<td>Work Group</td>
<td>Work Method</td>
<td>Competency Descriptor</td>
<td>Competency Use</td>
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<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>Advanced skilled autonomous worker</td>
<td>Work is likely to be without supervision with general guidance on progress and outcomes sought. The work of others may be supervised or teams guided and facilitated. Responsibility for and limited organisation of the work of others may be involved.</td>
<td>Competency at this level involves the application of knowledge with depth in some areas and a broad range of skills. There is a wide range of tasks and roles in a variety of contexts, with complexity in the range and choice of actions required.</td>
<td>Competencies are normally used within routines, methods and procedures where discretion and judgement is required, for both self and others, in planning and selection of equipment, work organisation, services, actions, and achieving outcomes within time constraints.</td>
</tr>
<tr>
<td>3</td>
<td>Competent skilled autonomous worker</td>
<td>Work is likely to be under broad guidance. The work of others may be supervised or teams guided. Responsibility for the planning and management of the work of others may be involved.</td>
<td>Competency at this level involves the self-directed application of knowledge with substantial depth in some areas, and a range of technical and other skills to tasks, roles, and functions in both varied and highly specific contexts.</td>
<td>Competencies are normally used independently and both routinely and non-routinely. Judgement is required in planning and selecting appropriate equipment, services, techniques and work organisation for self and others.</td>
</tr>
<tr>
<td>2</td>
<td>Advanced operative or service sector worker</td>
<td>Work is likely to be under direct supervision with regular checking, but may take the form of less direct guidance and some autonomy where working in teams is required. Responsibility for some roles and coordination within a team may be required.</td>
<td>Competency at this level involves the application of knowledge and skills to a range of tasks and roles. There is a defined range of contexts where the choice of actions required is usually clear, with limited complexity in the choice.</td>
<td>Competencies are normally used within established routines, methods and procedures, in some cases involving discretion and judgement about possible actions.</td>
</tr>
<tr>
<td>1</td>
<td>Competent operative worker</td>
<td>Work is likely to be under direct supervision with regular checking, but may take the form of less direct guidance and some autonomy where working in teams is required.</td>
<td>Competency at this level involves the application of knowledge and skills to a limited range of tasks and roles. There is a specified range of contexts where the choice of actions required is clear.</td>
<td>Competencies are normally used within established routines, methods and procedures that are predictable, and within which judgement against established criteria is also involved.</td>
</tr>
</tbody>
</table>
• the level of discretion, autonomy, and freedom to act increases and broadens, and is related to a wider span of activity

• the range of situations dealt with, the complexity of the work, and the judgements made increase and broaden

• responsibility and accountability expands

• the complexity, depth and breadth of knowledge needed increases

• competencies become related to management or specialist functions.

The Australian Standards Framework relates to competent performance in work. The levels are not entry levels and competency at a particular level does not imply that the competencies at all lower levels in that industry are held, unless an industry explicitly requires this in its standards.

Qualifications

At present (May 1993), tertiary qualifications are classified according to the Register of Australian Tertiary Education (RATE) and include Certificate, Advanced Certificate, Associate Diploma and Diploma courses in vocational education. These qualifications are not aligned to the Australian Standards Framework and only recently developed courses are competency based.

You can make a judgement about the likely ASF level of work being done by competent people who hold a particular qualification. At best, this is an informed opinion that can be considered when determining the appropriate level of qualification. You must remember that the National Training Board has not endorsed current qualifications as being appropriate, nor do people have to have a particular qualification before they can be assessed as competent.

A national project is underway to align vocational education and training awards with the Australian Standards Framework. The titles 'Certificate' and 'Diploma' are used widely throughout the world to denote trade level and paraprofessional, technician and technologist level credentials. The titles
ASF and Qualifications

<table>
<thead>
<tr>
<th>ASF Level</th>
<th>Present Qualifications</th>
<th>Proposed Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>(National Diploma Level 3)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>National Diploma Level 2</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>National Diploma Level 1</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>National Certificate Level 4</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>National Certificate Level 3</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>National Certificate Level 2</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>National Certificate Level 1</td>
</tr>
</tbody>
</table>

26 Developing Competency Based Curriculum Modules
'Advanced Certificate' and 'Associate Diploma' are rarely used, if at all, by other countries for vocational education and training credentials.

The 'Recognition of Training Working Party' (ROT) of the Vocational Education, Employment and Training Advisory Committee (VEETAC) has proposed a credentials system comprising four levels of National Certificate and two or three levels of National Diploma, aligned to the Australian Standards Framework.

Course Design and Development

The starting point for curriculum development is the relevant competency standards. They are the benchmarks for the design and development of vocational education and training programs. Through its competency standards, industry can specifically state the performance from people that is required in the workplace. Vocational education and training programs are based on enabling people to achieve these standards.

Programs, or courses, can be structured in many different ways, provided that when delivered they enable learners to achieve the stated outcomes of the course. Innovation and diversity are critical features of good curriculum design but curriculum developers must consider the knowledge, skills and behaviour that learners will have on entering a course and the context in which learners are likely to use what they have learnt during a course.

Course design and development is outside the scope of this program. It requires considerable time, rigour and expertise. Decisions affecting course design are made before curriculum modules are developed, or suitable existing modules are identified.

The starting point for a curriculum module writer is the module specification prepared by the course designer. In preparing this specification, the course designer will have investigated and considered many factors, and obtained answers to these questions.
1. **What are the terms of reference for the course?**

- Why is the course being developed?
- What are the intended outcomes of the course?
- How do the intended outcomes relate to competency standards or skill analysis?
- What is the relevant ASF level?
- What is the relationship of this course to other education and training programs?
- Who are the target learners?
- What is their educational background, work experience, and likely locations?
- How will these influence curriculum development and delivery?
- Who will develop the curriculum?

2. **What knowledge, skills and behaviour are to be developed in the course?**

- What knowledge, skills and behaviour are critical for performance in a variety of situations?
- What knowledge, skills and behaviour are necessary to cope with known or anticipated developments?
- What knowledge, skills and behaviour needed to perform task skills, task management skills, transfer skills, contingency management skills, and work environment skills?
- What include underpinning knowledge, skills and behaviour is needed?
- What is the likely range of equipment, services, processes, or methods to be covered in the course?
- What types of learning materials are likely to be available to assist learning?
- How can prior learning be recognised?

3. **What is the most appropriate course structure?**

- How can the knowledge, skills and behaviour needs be structured and grouped?
- How many modules should be included in the course?
- What are the proposed titles of the modules?
- What is the estimated nominal duration of each module?
- What should each module cover?
- Which modules will cover generic skills -
computing, communications; key competency areas?

- How can the modules be clustered and sequenced to integrate learning, to reinforce learning, and to provide links between knowledge, skills and behaviour?
- What are the learner entry requirements?
- How will the course be delivered?

From the course structure, the specification for module development is prepared. At this stage of curriculum development, the course structure is 'proposed'. As module development takes place, probably the course design will be modified to take into account changes indicated by the development process.

Course design and development is covered in the program 'CBT: How's It Done?' and in the (proposed) program 'CBT: From Standards to Curriculum'.

Key Points

- Competency is specifying, combining and applying knowledge, skills and attitudes to perform functions to a required standard.

- Competency comprises:
  - Task skills
    - performing individual tasks
  - Task management skills
    - managing several tasks within a job
  - Transfer skills
    - being able to adapt to new or changed situations
  - Contingency management skills
    - responding to irregularities and breakdowns in routine
  - Work environment skills
    - dealing with situations, responsibilities and expectations of the workplace
• Each Competency Standard consists of:

  • Unit of Competence
  • Element of Competence
  • Performance Criteria
  • Range of Variables
  • Evidence Guide

• The Key Competencies are

  • Collecting, analysing and organising information
  • Communicating ideas and information
  • Planning and organising activities
  • Working with others and in teams
  • Using mathematical ideas and techniques
  • Solving problems
  • Using technology

• The Australian Standards Framework provides eight reference levels for developing and recognising competency standards.

• Competency standards are the basis for developing competency based vocational education programs.

• A competency based education and training program is one that is based on, and relates to, industry developed competency standards.

• Course design and development must address many relevant issues, including the

  • terms of reference for the course
  • knowledge, skills and behaviour to be developed in the course
  • most appropriate course structure.
3 Developing the Syllabus

**Learning Outcome**
By completing this unit, you will be able to develop a syllabus for a competency based curriculum module.

**Assessment Criteria**
To show that you have achieved this learning outcome, you must be able to:

1. Differentiate between competency based vocational programs and traditional educational programs.
2. Provide the key information that should be included in a competency based syllabus.
3. Identify the purpose of a competency based module and relate it to competency standards.
4. Determine and justify a nominal time allocation for completion of a module.
5. Develop learning outcomes that are related to competency standards.
6. Specify assessment criteria for each learning outcome.
7. Describe appropriate conditions in which learning and assessment should take place.

**About this unit**
This unit will help you to develop the structure of a competency based curriculum module.
Module Structure

In competency based education and training, the syllabus comprises a course outline and a series of modules. These modules:

- have a specific learning purpose
- can stand alone as discrete 'chunks of learning'
- can be linked to other modules
- have one or more learning outcomes
- can be assessed separately
- provide flexibility in learning and course design
- are linked to the aim of the course

A module is a learning package designed to satisfy a specified educational purpose. Modules are complete in themselves and must be capable of standing on their own, but they can be linked to other modules in the same or related areas. They consist of one or more learning outcomes at a specified level of knowledge and understanding or skill performance. Modules must be designed so that the learning outcomes are able to be assessed. Modules are linked to the aim of the course and are aggregated together in an educationally sound and cohesive way to form courses. Because the modular curriculum structure is flexible, it is easier to organise vocational education programs to meet individual learner's needs and abilities.

Module Titles

The module title should give a clear and concise description of what the module is about.

Examples

- Monitoring and Evaluating Business Performance
- Taxi Passenger Transport and Delivery
- Producing Nursery Plants
- Workplace Safety in Electrical Appliance Repair Work
- Audio Visual Aids

Module Descriptor

When writing a vocational education module for accreditation, you must include information about:
- the purpose of the module
- its relationship to competency standards
- nominal time allocation
- entry competencies - modules to be completed or competencies developed before beginning this module
- how the module should be delivered
- how prior learning and current competencies can be recognised
- a strategy to assess whether or not learners have achieved the purpose of the module
- the learning outcomes

For each Learning Outcome you must provide information about

- the assessment criteria
- the conditions under which learning and assessment should take place
- suggested methods of assessment

The most common way to develop a module is to establish the purpose of the module and its relationship to competency standards, or skills analysis, and then develop learning outcomes relevant to that purpose. This method is used when a Purpose Statement is included in the development specification for the curriculum module.

An alternative way is to develop learning outcomes from the relevant competency standards, or skills analysis, then group related learning outcomes into modules and write a purpose statement for each module. This process is used in course design and results in a very specific brief for the curriculum module writer because both purpose statement and learning outcomes can be provided.
Purpose of the Module

The purpose statement explains why a module is included in an educational program. It should state:

- who is intended to complete the module
- why a learner should complete the module
- what a learner will be able to do after completing the module.

The purpose statement generally relates to, or is derived from, a Unit of Competence. It should state clearly the intended outcome, or result of a learner completing the module, and it should not be ambiguous or vague.

Writing a Purpose Statement

To write a 'purpose' statement, answer the questions:

- "Who are the learners?"
- "Why should these learners complete this module?"
- "What will the learners be able to do when they have completed the module?"

Example 1: Monitoring and Evaluating Business Performance

The purpose of this module is to assist operators of small businesses to analyse the profitability of their business so that they can decide whether changes in management of the business are needed.

Learners who complete this module will be able to monitor and evaluate business performance.

Example 2: Taxi Passenger Transport and Delivery

This module is designed to help trainee taxi cab drivers deliver passengers to their destinations by the most appropriate route.
By completing this module, taxi drivers will be able to locate passenger destinations, identify the most appropriate route to take, and integrate with local transport systems.

Example 3: Producing Nursery Plants

The purpose of this module is to provide competency based training in propagating and maintaining healthy nursery plants.

It is designed for plant nursery operators.

After completing this module, learners will be able to prepare growing sites, sow plants, maintain the site, manage growing conditions and manage plant pests, weeds and diseases.

Example 4: Workplace Safety in Electrical Appliance Repair Work

This module is designed for electrical appliance repairers.

The module will assist them to apply occupational health and safety requirements associated with electrical work.

By completing the module, learners will be able to maintain a safe working environment that complies with legal and general occupational health and safety requirements.

Example 5: Audio Visual Aids

The purpose of this module is to provide competency based training for TAFE teachers and workplace trainers in selecting, setting up, operating and preparing learning materials for audio visual aids used in teaching activities.
On completion of this module, TAFE teachers will be able to use appropriate audio visual aids to improve learning by students in TAFE courses.

Relationship to Standards

Any training course submitted for accreditation must state how the curriculum will contribute to a learner being able to achieve a required competency standard. The curriculum document must state how a course and module relates to competency standards endorsed by the National Training Board. You should:

• relate the purpose of the module to a job unit of competency or an element of competence if these have been established, or to a job function if competency standards have not been identified.

• state how the module outcome relates to competencies at the relevant ASF levels.

Although the course outline will relate the course as a whole to competency standards, each module should also be related to a relevant standard. Remember that modules can be incorporated into a number of courses and it is important that course designers who may wish to use them have an indication of how suitable a module may be for a different target group.

How can you relate the module purpose to a specific competency standard if these have not been established?

• Where competency standards endorsed by the National Training Board do not exist, you can refer to equivalents specified by regulatory authorities, licensing bodies or industrial award requirements, or to an industry based skills analysis.

• Learning outcomes in training programs can lead to the development of competency standards, provided they are developed in consultation with an industry-based advisory group.
• You can relate the module outcome to the Australian Standards Framework Competency Levels.

Example

• For a module directed to ASF Level 3 competencies, show how completion of the module will assist the learner to establish work orientation, gain knowledge and skills to select and use appropriate techniques and equipment, and perform tasks of some complexity using applied theoretical knowledge and motor skills.

The syllabus should provide evidence that the standard of the module is appropriate to the educational award or credential of which it is a part.

Example 1: Monitoring and Evaluating Business Performance

This module is suitable for participants who work independently on tasks which require a combination of technical and theoretical knowledge and motor skills. They may be required to carry out limited creative, planning, design or supervisory functions.

The module relates to the development of competencies at ASF level 5.

Example 2: Taxi Passenger Transport and Delivery

This module relates to Unit of Competence 2, "Plan and Complete Journeys", of draft Taxicab Driver Competency Standards.
Example 3: Producing Nursery Plants

This module relates to people developing competencies as advanced operatives at ASF level 2. The module will develop their knowledge, skills and capacity to perform proceduralised tasks under general supervision and more complex tasks involving the use of theoretical knowledge and motor skills under close supervision.

Example 4: Workplace Safety in Electrical Appliance Repair Work

Workplace competency standards are being developed for this occupation. This module relates to standards of competent performance identified by a work skills audit as being appropriate to employees developing competencies at ASF level 4.

Example 5: Audio Visual Aids

This module relates to competency element 4.1 and performance criteria 4.1.3 of the National Industry Competency Standards for Workplace Trainers.

Having established the purpose of a module, you should check whether or not there are modules already available that satisfy this purpose. There are modules that develop generic skills and there may be other modules which have a similar purpose statement to that of the module being developed. If generic modules, or similar modules, can be used, you will save valuable resources by using them. This is one of the benefits of module-based curriculum.

Nominal Duration

The next step is to establish a nominal time allocation for the module, to use as a guide while developing the syllabus. This is an estimate of the time required for an 'average' learner to achieve the purpose of the module. At this stage of syllabus development, setting a nominal delivery or learning time gives you
some idea of a constraint within which the module will be presented. You will need to check, and probably revise, these suggested time allocations as you develop the syllabus. Nominal time allocation will be used when identifying teaching time needed to deliver the module.

Decide the nominal time allocation according to the

- level of the competency standards to be addressed
- complexity of the learning outcomes
- teaching and learning methods to be used
- assessment methods

A module does not require a fixed number of hours to complete. Student complete the module when they achieve the learning outcomes, but competency based modules do not necessarily have to be completed through a self-paced learning strategy.

A nominal duration of about 30-40 hours is a good basis on which to develop a module comprising several learning outcomes because

- it is sufficiently self-contained to present achievable learning outcomes
- it is more likely that some units and elements of competence may be achieved in this time through educationally sound learning outcomes
- it does not present an onerous barrier to learners
- it facilitates recognition of prior learning and/or current competencies by the learner
- it lends itself to a variety of completion patterns for learning sessions, whether on-the-job, off-the-job, or self-directed learning.

Example

A 36 hour module can consist of 18 x 2 hour, 12 x 3 hour, 9 x 4 hour, 6 x 6 hour, 5 x 1 day blocks of learning.
Very short modules (for example, those less than 15 hours) often do not develop skills other than task skills and may not form an educationally sound and cohesive program.

Activity

Refer to Worksheet 3.1.

For the module that you are writing:

- identify the ASF competency level that is appropriate to the module
- state the purpose of the module
- relate the purpose of the module to the appropriate competency standard
- suggest a nominal time allocation for completion of the module.

Note that these are draft statements at this stage. You can refine them as curriculum writing proceeds.

Check that 'purpose' statements state:

- who is intended to complete the module
- the intended outcome of the module
- what a learner will be able to do after completing the module.

Check that 'relationship to standards' statements state how this module relates to industry approved units or elements of competence, or to other industry requirements.

Check that the nominal time allocation is consistent with the concept of a 'manageable chunk' of learning.
Specifying Learning Outcomes

In the basic model of competency based education and training, industry leaders see a direct relationship between competency standards and the curriculum.

<table>
<thead>
<tr>
<th>Competency Standard</th>
<th>Vocational Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of Competence</td>
<td>&gt; Modules</td>
</tr>
<tr>
<td>Elements of Competence</td>
<td>&gt; Learning Outcomes</td>
</tr>
<tr>
<td>Performance Criteria</td>
<td>&gt; Assessment Criteria</td>
</tr>
</tbody>
</table>

In practice, this direct relationship is often not the case. Knowledge, understanding and skill in curriculum development and implementation is needed to make sure that the learning process is soundly based. Curriculum writers need to use judgement in deciding how to use the competency standards as a basis for developing learning outcomes. Several possibilities are:

- Some elements of competence may translate readily into learning outcomes.

- Some elements of competency may be combined to produce a single learning outcome.

- A single element of competence may lead to several learning outcomes.

- One or more performance criteria may be used to form a learning outcome.

- A single performance criteria may be the basis for several learning outcomes.
Example 1: Monitoring and Evaluating Business Performance

A learning outcome developed directly from an element of competence.

Element of Competence
• Monitor and evaluate the cash flow performance of the business.

Learning Outcome
• Learners will be able to monitor and evaluate the cash flow performance of the business.

Example 2: Planning and Completing Taxi Journeys

A learning outcome developed by combining several elements of competency.

Element of Competence
• Locate destinations
• Identify the most appropriate routes

Learning Outcome
• Learners will be able to locate a passenger’s destination and choose the most appropriate route to reach it.

Example 3: Producing Nursery Plants

A single element of competence leading to several learning outcomes.

Element of Competence
• Manage plant pests, weeds and diseases

Learning Outcome
• Learners will be able to use common herbicides in ways that do not endanger themselves or others.
Example 4: Workplace Safety in Electrical Appliance Repair Work

A learning outcome may be developed from one or more performance criteria.

Performance Criteria
- Use of fire extinguishers to put out a range of fires that can occur in the workplace is demonstrated.

Learning Outcome
- Learners will be able to react quickly and deal appropriately with a range of fires that may occur in an electrical workshop.

Example 5: Audio Visual Aids

Several learning outcomes may be developed from a single performance criterion.

Performance Criteria
- Training equipment and materials are used correctly and efficiently.

Learning Outcome
- Learners will be able to set up and operate an overhead projector for a seminar or training session.

Relationship between competency standards and learning outcomes

Competency Standards are set by industries and enterprises, not by education and training providers. The role of education and training providers is to develop vocational programs that will assist learners to develop knowledge and skills and achieve the competency standards. In most cases, achievement of competency standards requires on the job practice and experience as well as education and training.

Competency = education + training + practice + experience
Generally, industry competency standards cannot be achieved within the time constraints of a vocational education program. In these cases, learning outcomes should be as closely related to the competency standards as possible.

Writing Learning Outcomes

Learning outcomes are the intended result of learning. They do not describe what the learners will learn about, or what they will be taught, or how they will learn.

To write Learning Outcomes, answer the question:

- "What will learners be able to do by completing this module?"

Begin your answers to this question "Learners will be able to . . ." and add

- an action verb specifying the activity
- an object of the activity
- any conditions of the activity

You must

- describe each outcome separately, so that each learning outcome consists of one verb and one object
- write in terms of what people who have completed the module will be able to do, not what people undertaking the module will learn
- make sure that the statement says what learners will be able to do, not what they will know, or appreciate, or be aware of
- keep the statement clear and concise; do not use unnecessary words
- write learning outcomes that are directly relevant to the purpose of the module and are an essential building block in achieving it

Developing Competency Based Curriculum Modules
• not write learning outcomes that are too narrow or too broad, and do not include too many within one module.

Activity

Refer to Worksheet 3.2.

For the module that you are writing:

• develop (at least) one learning outcome

When you have written the learning outcomes, judge whether or not they state clearly and concisely what learners should be able to do after completing that part of the module.

If any learning outcomes do not state what learners should be able to do, or are not clear and concise, rewrite them.

Some common errors that you may make are to write learning outcomes

• as statements of what will be learnt
  eg. 'Knowledge and understanding of writing learning outcomes'

• with unnecessary words
  eg. 'Demonstrate an ability to correctly write learning outcomes'

In both cases, these learning outcomes could be written as

• 'Learners will be able to write learning outcomes'.

Specifying Assessment Criteria

Assessment Criteria are the key indicators of how well students have achieved a learning outcome. They are the performance standards against which achievement of the learning outcomes is judged.
Assessment criteria are

- the building blocks that will help learners to perform the learning outcome competently
- intermediate steps in showing achievement of the learning outcome
- evaluative statements that specify what learners are expected to do to show that they can apply the knowledge and skills that they have learnt to achieve the learning outcome.
- the criteria that an assessor can use to judge how well learners have achieved a learning outcome.

Assessment criteria may

- be directly related to a learning outcome.
- specify required underpinning knowledge.
- be related to process; that is, to some aspect of the activity
- be related to product; that is; to some aspect of the result of the activity.

Assessment criteria should be

- the essential factors used to judge whether or not a learner has achieved a learning outcome
- relevant to the learning outcome
- able to be measured in some way
- clearly stated so that they are easily understood

Usually, each learning outcome should have between three and six assessment criteria. If there are less than three assessment criteria, it is possible that some have been overlooked, or the learning outcome is too superficial. If there are more than six assessment criteria, it is possible that some of them are not essential and they may be learning steps rather than assessment criteria.
Standards statements in the assessment criteria set the required standards that the learners must meet.

For process related assessment criteria, the standards statement is usually an adverb or adverbial phrase. For product related assessment criteria, the standards statement is usually an adjective or adjectival phrase.

The standards statements define the standards of the process or the features of the product that are necessary for satisfactory performance.

Examples

- For a learning outcome about telephone answering, one of the assessment criteria could be
  - "Answer the telephone promptly and politely"

  'Promptly' and 'politely' give a reasonable definition of the standard of performance required while carrying out the process.

- For a learning outcome about completing a petty cash claim, one of the assessment criteria could be
  - "Produce a legible, accurate and complete petty cash docket”.

  'Legible', 'accurate' and 'complete' describe the features of the product that are required to show satisfactory achievement of the learning outcome.

Do not use words such as 'appropriately' or 'correctly' where more precise words can be used. 'Appropriate' and 'appropriately' can be used only when they are qualified; that is, they must be 'appropriate' to something, such as 'appropriate to the situation'. 'Correct' and 'correctly' can be used when there can be only one correct outcome, or way of doing something.
Writing Assessment Criteria

To write assessment criteria, ask the question:

- "What must learners be able to do to show that they have achieved the learning outcome?"

Use a brainstorming technique (alone or with other writers) to list the

- knowledge
- skills
- behaviour

that learners may need to demonstrate to show that they have achieved the learning outcome. List

- what learners need to know
- what learners need to do
- how learners need to feel or behave.

Now, go through the list and mark each item as either

- essential
- desirable
- appropriate
- unnecessary

Delete all the items marked as 'unnecessary'. Go through the list again and repeat the process at least once more.

Now answer the question:

- "What must learners do to show that they have achieved the learning outcome?"

Begin your answers to the question with the phrase "To show that they have achieved the learning outcome, learners must . . ." and

- work through the brainstormed list of items marked 'essential', then those marked 'desirable', and then those marked 'appropriate'.

- identify what learners will need to do to show that they have gained the necessary knowledge and skills to achieve the learning outcome.
• specify what learners must be able to do, especially in terms of accuracy, conformity to regulations, and industry standards

• edit the assessment criteria so that you have three to six essential and relevant criteria that are measurable and clearly written.

• number each statement consecutively

• keep the lists of knowledge, skills and behaviour for use when suggesting module content.

Example 1: Monitoring and Evaluating Business Performance

Assessment Criteria

1. Show how to record income and expenditure entries on a cash sheet.
2. Reconcile income and expenditure records with cash statements.
3. Compare actual income and expenditure with budgeted income and expenditure.
4. Analyse differences between actual and projected cash flow.

Example 2: Planning and Completing Taxi Journeys

Assessment Criteria

1. List major tourist attractions, shopping centres, industrial and business sites within the region serviced.
2. Describe the location of these features in relation to the geography of the region.
3. Name the major traffic routes passing through the region and the places that they service.
4. Use a street directory to find given streets and places.
5. Choose a route from a point of hire to a passenger's destination and justify this choice in terms of distance, traffic conditions, and travel time.
Example 3: Producing Nursery Plants

*Assessment Criteria*

1. Choose and wear appropriate protective clothing when using herbicides.
2. Handle common herbicides safely, in both concentrated and dilute forms.
3. Calculate quantities of concentrated herbicides needed to make diluted solutions for specific applications.
4. Prepare working solutions of herbicides from concentrated liquid, granular and pelleted forms of concentrated herbicides.
5. Operate applicators in a safe, effective and efficient way.
6. Thoroughly clean spray applicators ready for storage.

Example 4: Workplace Safety in Electrical Appliance Repair Work

*Assessment Criteria*

1. Select appropriate fire extinguishers for various classes of fires that may occur in an electrical workshop.
2. Use pressurised water, soda acid, foam, carbon dioxide and dry chemical fire extinguishers to put out a workplace fire.

Example 5: Audio Visual Aids

*Assessment Criteria*

1. Choose a suitable room layout for the operator, overhead projector and screen.
2. Set up the overhead projector and projection screen so that the screen is aligned with the projector and corrected for keystone effect.
3. Identify and operate the power switches on the overhead projector.
4. Project overhead transparencies onto the screen.
5. Carry out minor maintenance on the projector, including replacing the projector lamp and cleaning the lenses, platen and fresnel.

Activity

Refer to Worksheet 3.2.

For the module that you are writing

- develop assessment criteria for (at least) one learning outcome.

Checking Learning Outcomes and Assessment Criteria

Assessment criteria should provide a satisfactory link between the learning outcome and evidence of achievement of the learning outcome. To do this, assessment criteria must be

- **Specific**, so that both teacher and learners know exactly what is intended and there is no ambiguity.

- **Measurable**, so that both teacher and learners can assess to what extent the learners have achieved what they should be able to do.

- **Achievable**, because if the assessment criteria cannot be achieved by the learners, with some effort, the learners will not be motivated to learn.

- **Relevant**, because satisfying the assessment criteria must make some difference to the learner’s ability to achieve the lesson outcome.

- **Trackable**, so that both teacher and learners will know how learners are progressing towards the outcome as learning proceeds.
Learning Outcomes and Assessment Criteria must be written in ways that can be assessed. SMART learning outcomes and assessment criteria tell learners what they should be able to do, not what the teacher intends to achieve during the lesson.

To achieve SMART learning outcomes and assessment criteria, use 'action words' that describe what the learner must be able to do, not 'abstract words' that are less specific and may be misinterpreted.

<table>
<thead>
<tr>
<th>ACTION Words</th>
<th>Abstract Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>list</td>
<td>know</td>
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<tr>
<td>recite</td>
<td>perceive</td>
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<tr>
<td>match</td>
<td>appreciate</td>
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<td>construct</td>
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<td>choose</td>
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<td>categorise</td>
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<td>contrast</td>
<td>comprehend</td>
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<td>combine</td>
<td>grasp the significance of</td>
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<td>justify</td>
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<td>state</td>
<td>be familiar with</td>
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<td>record</td>
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<td>summarise</td>
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<td>calculate</td>
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<tr>
<td>decide</td>
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</tbody>
</table>

The learning outcomes and assessment criteria should not contain words describing actions that cannot be assessed. Neither teacher nor learner can assess whether a learner "knows", "understands", "appreciates", or "is aware of" something unless the
learner does something, such as "states", "defines", "lists", "names", "describes", to express that knowledge, understanding, appreciation or awareness.

The "Hey, Joe" Test

A useful way to test a learning outcome or an assessment criterion is to use it to finish this sentence:

- "Hey, Joe, let me show you how I can . . ."

Examples

- "Hey, Joe, let me show you how I can reconcile income and expenditure records with bank statements."
- "Hey, Joe, let me show you how I can use a street directory to find streets and places."
- "Hey, Joe, let me show you how I can handle common herbicides safely."
- "Hey, Joe, let me show you how I can use a fire extinguisher to put out a fire."
- "Hey, Joe, let me show you how I can set up and operate an overhead projector for a seminar presentation."

But not:

- "Hey, Joe, let me show you how I can be aware of appropriate learning outcomes and appreciate the use and value of having clear assessment criteria for a curriculum module."

If the result is absurd, or makes you want to laugh, your objective is not SMART and you should rewrite it.
Example:

- "... know how to make a quick response to a dangerous situation"

should be written as

- "... respond quickly to a dangerous situation".

Activity

Refer to Worksheet 3.3

- Read the ten Learning Outcomes or Assessment Criteria, and decide whether or not each is correctly written. If it is, place a tick (✓) to the left of the statement number. If a statement is incorrectly written, place a cross (X) to the left of the statement number and rewrite it as a correct Learning Outcome or Assessment Criterion.

Remember, the exercise is to evaluate each statement, not to perform the task suggested by the statement.

These statements are written correctly as learning outcomes or assessment criteria:

- List five action words that could be used to write valid assessment criteria.

- Apply a process to develop learning outcomes and assessment criteria for a module.

- Explain what is meant by "SMART assessment criteria".

- Prepare lesson plans from clearly stated learning outcomes and assessment criteria.

- Assess learning outcomes to ensure that they provide sufficient scope for a range of learning strategies to be used to develop competence.
• Discriminate between valid learning objectives that are specific and observable, and statements that are vague and not assessable.

These statements are abstract and need to be written in SMART terms to be valid learning outcomes or assessment criteria.

• Know how to write purpose statements for modules in a competency based course.

• Understand the reasons for writing learning outcomes and assessment criteria.

• Be familiar with the differences between course aims, learning outcomes and assessment criteria.

• Demonstrate an appreciation of the role of assessment criteria in setting learner tests.

The statements should be rewritten as

• Write purpose statements for modules in a competency based course.

• Discuss the reasons for writing learning outcomes and assessment criteria.

• Differentiate between course aims, learning outcomes and assessment criteria.

• Develop student tests based on learning outcomes and assessment criteria.
Activity

Refer to Worksheet 3.2.

- Review the Learning Outcomes and the Assessment Criteria that you have written.

Make sure that they are SMART. If not, rewrite them.

If you have developed learning outcomes or assessment criteria that contain abstract performance indicators such as "know", "understand", "be familiar with", etc., ask yourself:

- "How will you know that the learners 'know'?"
- "How will the learners show that they are 'aware of'?"
- "How will the learners demonstrate, to your satisfaction, that they 'understand'?"
- "What will the learners 'do'?"

Identifying Learning and Assessment Conditions

The conditions statement outlines the situations and contexts under which learners will learn and be assessed. It gives an indication of the scope of the learning outcome and what needs to be covered and assessed.

Conditions may cover such situations as facilities, equipment, range of technology, particular types of locations, learning materials that may or may not be used, access to reference material, various contexts and situations. Conditions statements provide flexibility to cope with local situations. They can either expand or limit the intention of a learning outcome.

Use the 'Range of Variables' statements in the competency standards as a guide when identifying a suitable range of facilities and equipment.
• List any essential facilities, equipment, tools, reference material that learners will use during learning and/or assessment.

• Outline the situations and contexts within which learners should achieve the learning outcome. This should include the types of workplaces, range of equipment they may use, use of technology, etc.

Example 1: Monitoring and Evaluating Business Performance

Learning and Assessment Conditions

• Learners will have access to a computer and spreadsheet application.

Example 2: Planning and Completing Taxi Journeys

Learning and Assessment Conditions

• Learners will use a street directory of the region serviced.

• Cover country as well as metropolitan locations.

Example 3: Producing Nursery Plants

Learning and Assessment Conditions

• This learning outcome is to be achieved and assessed 'on site' (actual or simulated).

• Learners will have access to measuring containers and will use manufacturers' instruction sheets and labels to calculate herbicide concentrations.

• Learning and assessment activities must include appropriate occupational health and safety procedures for use of chemicals and disposal of surplus solutions.
Example 4: Workplace Safety in Electrical Appliance Repair Work

Learning and Assessment Conditions

- Cover electrical fires and fires caused by burning wood, paper and fabric.
- For learning and assessment purposes, learners may demonstrate they can use fire extinguishers by simulation, without discharging the extinguisher.

Example 5: Audio Visual Aids

Learning and Assessment Conditions

- Learners should have access to an overhead projector, projection screen, replacement lamps and prepared overhead transparencies.
- They should be able to set up the equipment in rooms of different sizes and shapes.

Activity

Refer to Worksheet 3.2.

For (at least) one Learning Outcome that you have written.

- state the conditions that apply to learning and assessment.
Key Points

Developing a syllabus for a competency based module involves:

- determining the purpose of the module
- relating the purpose to competency standards
- specifying learning outcomes that contribute to achieving the purpose of the module
- specifying assessment criteria for each learning outcome
- designing the module so that learners who complete it will progress towards achieving industry competency standards.

Having determined the purpose of the module, its learning outcomes and assessment criteria, the next step is to specify how learners can be assessed to see if they have achieved the learning outcomes and thus the purpose of the module.

Complete the Learning Outcomes, Assessment Criteria and Conditions for Learning and Assessment for the curriculum module that you are developing.
# Tasks by Level According to TAFE Awards

<table>
<thead>
<tr>
<th>Technologist, Paraprofessional, Manager (Branch)</th>
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</thead>
<tbody>
<tr>
<td>Shows high level of practical skill</td>
</tr>
<tr>
<td>Plans with flexibility, designs with creativity</td>
</tr>
<tr>
<td>Diagnoses and solves varied problems; makes generalisations</td>
</tr>
<tr>
<td>Makes informed judgements, using appropriate criteria</td>
</tr>
<tr>
<td>Carries out surveys, investigations, evaluations</td>
</tr>
<tr>
<td>Communicates effectively, on broad issues or complex ideas</td>
</tr>
<tr>
<td>Prepares and presents submissions and reports (multiple perspectives)</td>
</tr>
<tr>
<td>Determines staffing needs and job descriptions</td>
</tr>
<tr>
<td>Manages workplace with more than one unit or project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technician, Manager (Unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designs, plans operations</td>
</tr>
<tr>
<td>Analyses work situations</td>
</tr>
<tr>
<td>Selects creative solutions</td>
</tr>
<tr>
<td>Supervises quality control</td>
</tr>
<tr>
<td>Solves customer problems</td>
</tr>
<tr>
<td>Explains procedures to staff, colleagues</td>
</tr>
<tr>
<td>Discusses with skilled peers</td>
</tr>
<tr>
<td>Carries out public presentations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trade Technician, Supervisor, or equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operates with expertise</td>
</tr>
<tr>
<td>Supervises operations</td>
</tr>
<tr>
<td>Checks plans and diagrams</td>
</tr>
<tr>
<td>Prepares instructions</td>
</tr>
<tr>
<td>Gives instructions to staff</td>
</tr>
<tr>
<td>Trains a range of staff</td>
</tr>
<tr>
<td>Checks correction of faults</td>
</tr>
<tr>
<td>Orders, maintains equipment</td>
</tr>
<tr>
<td>Writes, presents reports</td>
</tr>
<tr>
<td>Supervises small team</td>
</tr>
<tr>
<td>Manages office, workshop</td>
</tr>
<tr>
<td>Practices with responsibility</td>
</tr>
<tr>
<td>Resolves practice problems</td>
</tr>
<tr>
<td>Analyzes work situations</td>
</tr>
<tr>
<td>Controls, reports on quality</td>
</tr>
<tr>
<td>Discusses issues with managers</td>
</tr>
<tr>
<td>Interprets OHS/EEO/industry codes</td>
</tr>
<tr>
<td>Discusses technical problems</td>
</tr>
<tr>
<td>Checks accounts, payments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tradesperson, Skilled Operator, Craftsperson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operates skilfully</td>
</tr>
<tr>
<td>Follows plans, diagrams</td>
</tr>
<tr>
<td>Diagnoses, corrects faults</td>
</tr>
<tr>
<td>Checks range of equipment</td>
</tr>
<tr>
<td>Discusses options with public</td>
</tr>
<tr>
<td>Writes brief reports</td>
</tr>
<tr>
<td>Gives instructions to assistant</td>
</tr>
<tr>
<td>Discusses technical facts</td>
</tr>
<tr>
<td>Discusses issues with peers and supervisors</td>
</tr>
<tr>
<td>Practices with efficiency</td>
</tr>
<tr>
<td>Applies in various situations</td>
</tr>
<tr>
<td>Checks quality control</td>
</tr>
<tr>
<td>Records, passes on public problems</td>
</tr>
<tr>
<td>Interprets technical data</td>
</tr>
<tr>
<td>Explains OHS/EEO/industry codes</td>
</tr>
<tr>
<td>Trains assistant</td>
</tr>
<tr>
<td>Handles accounts, payments</td>
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</table>

<table>
<thead>
<tr>
<th>Operator (usually under supervision)</th>
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<tbody>
<tr>
<td>Operates</td>
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<tr>
<td>Follows instructions</td>
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<tr>
<td>Recognises elementary faults</td>
</tr>
<tr>
<td>Interprets instructions</td>
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<tr>
<td>Exercises elementary control</td>
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<tr>
<td>Fills in report sheets</td>
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<tr>
<td>Reports verbally to supervisor</td>
</tr>
<tr>
<td>Practices</td>
</tr>
<tr>
<td>Applies in a routine situation</td>
</tr>
<tr>
<td>Follows quality control rules</td>
</tr>
<tr>
<td>Serves, informs public</td>
</tr>
<tr>
<td>Diagnoses elementary faults</td>
</tr>
<tr>
<td>Observes OHS/EEO/industry codes</td>
</tr>
</tbody>
</table>
4 Recommending Assessment Methods and Strategies

Learning Outcome

By completing this unit, you will be able to recommend suitable methods and strategies for assessing student achievement.

Assessment Criteria

To show that you have achieved this learning outcome, you must be able to:

1. Explain the use of criterion referenced assessment in competency based education and training programs.

2. Discuss the principles of validity, reliability, fairness and practicality in selecting appropriate assessment methods for competency based education programs.

3. Identify the advantages and disadvantages of a range of methods of learner assessment.

4. Select valid, reliable, fair and practicable assessment methods that are appropriate to specified learning outcomes.

5. Develop a holistic assessment strategy for a curriculum module.

6. Outline key issues relating to graded assessment in competency based education and develop a graded assessment specification.
About this unit

This unit is about recommending appropriate assessment methods and strategies for competency based curriculum modules. It is not about developing assessment events. Assessment criteria describe the standards that a learner must meet to achieve a learning outcome. Assessment methods are ways in which evidence of that achievement can be collected. Assessment strategies are ways in which assessment methods can be combined so that a learner is neither over-assessed or under-assessed.

What is 'assessment'?

In an educational context, assessment usually means using appropriate methods to judge a learner's achievement of intended outcomes. It includes both formative assessment and summative assessment.

Assessment is often confused with evaluation, which is the assessment of the merit or worth of something. In general, assessment is concerned with the learning of the individual, while evaluation focuses on such things as educational programs or courses.

In competency based education programs, judgements about a learner's performance are made against specified assessment criteria. They are criterion referenced rather than norm referenced.

In a norm referenced assessment, the performance of a learner is compared with the performance of other learners completing the assessment event, such as a test. In designing the assessment event, attempts are made to produce a wide range of results, so that learners' performances can be compared with each other. In this type of assessment, the 'pass' level is often determined arbitrarily, by predetermining the proportion of learners given each grade, or statistically, by using the standard deviation of the results obtained.

In criterion referenced assessments, the performance of each learner is compared with specific criteria, not
with the performance of other learners. In this type of assessment, the standard is determined before the test is administered. It is not necessary to produce a wide range of individual results because students are not being compared with each other.

Much of the assessment used in traditional vocational education courses is criterion referenced. However, the criteria against which learners are assessed can be variable, often depending upon the standards of the teacher.

### Assessment Principles

Assessment methods must be

- Valid
- Reliable
- Fair
- Practicable

### Valid Assessment

*Valid assessment* is an assessment event that measures precisely and accurately what it sets out to measure. *Validity* in assessment means "Does the assessment actually assess what it is supposed to assess?" It is concerned with "What is the test measuring?"

Many assessment methods do not assess the assessment criteria validly. The assessment methods should be selected so that learners actually do what the assessment criteria states they should be able to do. It is possible that some learners who can actually perform a task very well may not be able to reach an acceptable standard in a written test. Similarly, students who can describe how to do something may not be able to do it in practice. In both cases, different skills are required than those needed to satisfy the stated assessment criteria.

Here are some examples of assessment methods that do not assess the stated assessment criteria in a valid way.
<table>
<thead>
<tr>
<th>Example</th>
<th>Assessment Criteria</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Record income and expenditure entries on a cash sheet.</td>
<td>A written test asking learners to explain how they would enter in a cash book payments received for sale of goods and payments made for purchase of stock.</td>
</tr>
<tr>
<td>2</td>
<td>Use a street directory to find given streets and places.</td>
<td>A written test asking learners to list in order the steps they would follow to find a given street in a street directory.</td>
</tr>
<tr>
<td>3</td>
<td>Calculate quantities of concentrated herbicides needed to make diluted solutions for specific applications.</td>
<td>A practical test asking learners to prepare a diluted solution of a herbicide for a specific application.</td>
</tr>
<tr>
<td>4</td>
<td>Use pressurised water, soda acid, foam, carbon dioxide and dry chemical fire extinguishers to put out a fire.</td>
<td>An oral test in which learners are shown a range of fire extinguishers and asked to state the class of fire on which each one would be used.</td>
</tr>
<tr>
<td>5</td>
<td>Set up an overhead projector and projection screen so that the screen is aligned with the projector and corrected for keystone effect.</td>
<td>Ask learners to draw a diagram of a room layout showing how to set up the overhead projector and the projection screen correctly.</td>
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</tbody>
</table>
To improve the validity of assessment methods used

- Describe clearly and precisely what is to be assessed, the criteria by which it will be assessed, and how it should be assessed; that is, the learning outcomes, assessment criteria and assessment methods.

- Recommend assessment methods that actually assess what they claim to assess. For example, being able to describe how to change a tyre does not mean that a person can actually change a tyre.

- Collect evidence that shows how well the learner has achieved the learning outcomes or the purpose of the module.

- Suggest assessments that are at levels appropriate to the assessment criteria.

- Match the quantity and quality of assessment to the relative importance of the learning outcome in the person’s job.

- Propose assessment methods that integrate knowledge, attitudes and practical skills components of a learning outcome.

- Assess learner achievement under conditions that are as close as possible to those under which the related competency would be practised in the workplace.

- Assess skills over a period of time rather than 'once only'.

- Assess knowledge and understanding through oral questioning during the performance of the skill, not only by multiple choice tests or other written tests.

- Bear in mind that written and oral tests should not become a test of literacy skills unless these skills are required in the job, or are part of the learning outcome being assessed.

**Reliable Assessment**

*Reliable assessments* are those which measure learner achievement or performance consistently and...
precisely, and are free from bias or error. **Reliability** in assessment is concerned with *'How well is the test measuring?'*

A reliable assessment should be able to be used by a range of teachers with a range of learners and at different times, and produce similar results. The results obtained by learner A when assessed by teacher X in June and those obtained by learner B with similar ability, when assessed by teacher Y in November, should be similar.

To improve the reliability of learner assessment

- Provide unambiguous statements of assessment criteria.

- Ensure that the methods of assessment that you suggest will enable all assessors to measure learner performance consistently.

- Suggest assessment methods and strategies that allow for evidence of learner performance to be collected over a period of time and in a range of situations.

- Combine several assessments to produce a weighted assessment of the learner’s performance.

- Word all suggested assessments, such as assignments and projects, so that what is required is clearly stated and there is no ambiguity.

- Ensure that there can be no misunderstanding of that learners should do to show their achievements of the learning outcomes.

**Fair Assessment**

To be *fair* and *equitable*

- Assessment should provide for recognition of achievement, no matter how, where or when learning occurred.

- Everyone involved in the assessment process should be aware of their responsibilities.

- The criteria against which the performance is to be measured should be clearly stated and identified.
• The methods of assessment should be known and understood by the learners and the assessor.

• Alternative forms of assessment should be considered, provided they are valid and reliable.

• Learners should know well in advance when, how and by whom they will be assessed.

• If assessment comprises several components, learners and assessors must know how the different components will be brought together.

• Assessment must not directly or indirectly limit access to individuals solely on the grounds of age, race, gender, disability, employment status, social or educational background.

• There should be a demonstrable commitment to recognising the prior learning and current competencies of individuals.

• Access to assessment should not be subject to artificial or unnecessary restrictions such as prescribing the form of education and training required the minimum or maximum time period, or learning age limits.

Practicable Assessment As well as being fair, equitable, valid and reliable, assessment must be *practicable*; that is, any recommended assessment method or strategy must be able to be carried out.

When recommending an assessment method or assessment strategy, ask:

• Is it cost effective?

• Is it affordable?

• Is there sufficient time to complete the assessment tasks?

• Can all assessment criteria, or learning outcomes, be assessed?

• Should all assessment criteria, or learning outcomes, be assessed?
• Which assessment criteria, or learning outcomes, should be assessed?

• Is there sufficient equipment, materials and other resources available?

• Are there enough assessors to carry out the assessment fairly and reliably?

Summary

Assessment methods should

• assess what they are supposed to assess

• be able to be used by a range of teachers for a range of learners in a range of locations over a period of time

• be non discriminatory and unambiguous

• be able to be administered.

Assessment Methods

There is a range of assessment methods that can be used to assess learner achievement. These assessment methods can be grouped into different types which vary in their objectivity; that is, the degree of judgement required by the person carrying out the assessment.
### Written Objective Tests - Select Answer Type

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>True/False Statements</strong></td>
<td>Learners choose between two alternatives, only one of which is correct.</td>
<td>An electrical fire should be extinguished with a carbon dioxide fire extinguisher</td>
</tr>
<tr>
<td></td>
<td>The alternatives can be yes/no, correct/incorrect, right/wrong, as well as true/false.</td>
<td>True ___ False ___</td>
</tr>
<tr>
<td><strong>Multiple Choice</strong></td>
<td>Consist of a question or statement and a set of alternative answers, usually four, of which only one is correct.</td>
<td>The correct knot for tying the two ends of an arm sling is the:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A  clove hitch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B  reef knot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C  sheepshank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D  sheetbend</td>
</tr>
<tr>
<td><strong>Matching</strong></td>
<td>Learners match information from one list with information in another list.</td>
<td>Match the landmarks with the cities in which they are located by writing the number of the city alongside the name of the landmark.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Landmarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eiffel Tower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buckingham Palace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lake Burley Griffin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statue of Liberty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>London</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New York</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paris</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toronto</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Canberra</td>
</tr>
</tbody>
</table>
Written Objective Tests - Supply Answer Type

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculations</td>
<td>Learners are asked to calculate the numerical answer to a question.</td>
<td>The concentration of a pesticide is 5 grams per litre. How much of this concentrated pesticide will you mix with water to make 10 litres of spray solution containing 5 milligrams per litre?</td>
</tr>
<tr>
<td>Completion</td>
<td>A sentence is completed by adding the correct word or words.</td>
<td>The telephone was invented by</td>
</tr>
<tr>
<td>Short Answer</td>
<td>Learners are expected to write a number, one or two words, or a sentence in response to a question.</td>
<td>Name three basic operations performed on a lathe.</td>
</tr>
</tbody>
</table>

Practical Tests

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulated Work Exercises</td>
<td>Learners complete an exercise that closely resembles a workplace function.</td>
<td>Select appropriate ingredients from the range available and make a loaf of bread.</td>
</tr>
<tr>
<td>Structured Practical Exercises</td>
<td>Learners carry out practical tasks based on workshop, laboratory, classroom or field activities.</td>
<td>Join two pieces of timber with a dovetail joint.</td>
</tr>
<tr>
<td></td>
<td>Exercises tend to be parts of workplace tasks</td>
<td>A series of case studies.</td>
</tr>
<tr>
<td></td>
<td>Learners may proceed through several ‘stations’ and undertake a variety of practical tasks.</td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fault Finding Exercises</td>
<td>Learners are presented with a piece of equipment, a series of test results, a set of accounts, or something similar, and asked to identify an error or problem.</td>
<td>Given an electrical circuit that is not working, identify the fault and correct it.</td>
</tr>
</tbody>
</table>

**On Job Assessment**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Observation</td>
<td>Direct observation of the learner performing a practical task, technical skill, or interpersonal skill, in a real or simulated setting</td>
<td>A nursing student taking a patient's blood pressure</td>
</tr>
</tbody>
</table>

**Assignments**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Assignments</td>
<td>Usually involves an essay, report or answers to a series of questions.</td>
</tr>
<tr>
<td></td>
<td>Completed under 'non-test' conditions.</td>
</tr>
<tr>
<td>Projects, Surveys, Poster Presentations</td>
<td>An assignment involving some form of research or investigation by the learner.</td>
</tr>
<tr>
<td>Individual Contracts</td>
<td>A project in which the learner negotiates and agrees with the teacher, what will be done, by when, what will be produced, and how it will be assessed.</td>
</tr>
</tbody>
</table>
### Personal Appraisal

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Appraisal</td>
<td>Involves establishing criteria and standards to be applied and having fellow learner, or ‘peers’ make judgements about how well a learner has met them.</td>
</tr>
<tr>
<td>Self Appraisal</td>
<td>Involves learners in establishing the criteria and standards they will apply to their work and then in making judgements about how well they have been met.</td>
</tr>
</tbody>
</table>

### Essays

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted Response Essays</td>
<td>Present a well defined task and set explicit boundaries in the answer required and on its organisation.</td>
<td>&quot;Explain the advantages and disadvantages of essay tests and objective tests in vocational education, with reference to validity, reliability, fairness and practicality.&quot;</td>
</tr>
<tr>
<td>Extended Response Essays</td>
<td>Emphasises freedom of expression and creativity, ability to provide and organise ideas, and depth and scope of knowledge.</td>
<td>&quot;Compare and contrast essay tests with objective tests in vocational education.&quot;</td>
</tr>
</tbody>
</table>

### Verbal Assessments

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Presentations</td>
<td>Learners give an oral exposition, or lecture, on a topic.</td>
</tr>
<tr>
<td>Seminars</td>
<td>Learners give an oral presentation on a topic and then lead a group discussion on this topic.</td>
</tr>
<tr>
<td>Method</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Oral and Aural</td>
<td>Oral - learners make a spoken response to an assessment item</td>
</tr>
<tr>
<td>Tests</td>
<td>Aural - learners listen to some material and are assessed on their ability</td>
</tr>
<tr>
<td></td>
<td>to comprehend what they hear.</td>
</tr>
<tr>
<td></td>
<td><em>Viva voce</em> - questions are posed and answered verbally.</td>
</tr>
<tr>
<td>Interviews</td>
<td>Verbal communication between teacher and learners.</td>
</tr>
</tbody>
</table>

Usually, assessments are made up of one or more *test items*. A test item is a test question or exercise that a student must complete in order to be assessed.

The *more objective* the test item, the less judgement needed to assess the student’s response.

**Activity**

*Refer to Worksheet 4.1*

The key features of each type of assessment item are listed in the left hand column of the worksheet. Alongside each group of assessment methods, list some advantages and disadvantages of using those methods to assess students.

**Activity**

*Refer to Worksheet 4.2.*

The worksheet gives some examples of learning outcomes and their assessment criteria.

- For each example, suggest an assessment method that could be used to assess learner’s achievement of the learning outcomes
- Check the appropriateness of your selected methods against the assessment principles.
**METHODS FOR ASSESSING LEARNING**

<table>
<thead>
<tr>
<th>Assessment Methods</th>
<th>Purpose and Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Choice Tests</td>
<td>Factual and procedural knowledge, understanding of principles</td>
<td>Consistent, reliable, uniform, standardised</td>
<td>Assess ability rather than recall. Difficult to use for problem solving and higher order thinking.</td>
<td>Difficult to write; cheap and efficient to use.</td>
</tr>
<tr>
<td>Written Responses</td>
<td>Use of information; application of knowledge; generating ideas and solutions</td>
<td>Tests more complex set of skills; higher order thinking and problem solving</td>
<td>May assess language skill in addition to knowledge</td>
<td>Difficult to ensure reliable judgements; expensive to process.</td>
</tr>
<tr>
<td>Short Answer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended Answer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Assessments</td>
<td>Interpersonal skills; interactive thinking</td>
<td>Assessment of thinking skills; multi-dimensional</td>
<td>Difficult to standardise; variable conditions.</td>
<td>Problems with the reliability of judgements.</td>
</tr>
<tr>
<td>Performance Product</td>
<td>Psychomotor skills; functioning; ability to produce.</td>
<td>Holistic and direct assessment of skills.</td>
<td>Expensive of time and resources.</td>
<td>Difficult to ensure reliable judgements; logistical difficulties</td>
</tr>
<tr>
<td>Work Based Assessment</td>
<td>Overall performance and functioning.</td>
<td>Directness, breadth, range of assessment.</td>
<td>Duration, availability.</td>
<td>Dependent on supervisor and supervisor's judgements.</td>
</tr>
</tbody>
</table>

Activity

**Refer to Worksheet 4.3 (1)**

The worksheet lists a range of assessment methods.

- For each Learning Outcome in the curriculum module that you are developing, choose appropriate assessment methods by which to assess student achievement of each learning outcome.

- Check the appropriateness of your selected methods against the assessment principles of validity, reliability, fairness and practicality.

- Write these assessment methods under the heading ‘Assessment Method(s)’ for each Learning Outcome in the syllabus document

Assessment Strategies

In a competency based education program, the performance standards against which a learner is assessed could be achievement of:

- the purpose of the module, or
- each learning outcome, or
- the assessment criteria for each learning outcome.

Within the framework of competency based training, assessment is based on competency standards defined by industry and endorsed by the National Training Board. Competency based curriculum modules relate to these standards.

However, it is unlikely that a learner will achieve an industry competency standard just by completing a module, since practice and experience will be required as well as education and training. A learner may need to complete several modules, or even courses, plus work experience, to reach the standard of performance required in the workplace. Therefore,
industry competency standards alone may not be appropriate performance standards against which to assess learners in a competency based educational program.

A competency based curriculum module should state clearly what a learner who has completed the module is able to do. Therefore, the assessment methods and the overall assessment strategy must assess whether or not the learner can do these things.

**Holistic Assessment**

Assessment should be undertaken as a holistic process that integrates skills, knowledge and attitudes, and their practical application. Knowledge is important for all competencies and assessment must measure whole competence, including those aspects of knowledge, understanding and behaviour which underpin performance.

Because competency involves

- task skills
- task management skills
- transfer skills
- contingency management skills
- work environment skills

assessment of these skills in isolation is unlikely to give an accurate assessment of a learner’s ability to integrate them, as would be required in the workplace.

**Sampling versus Total Assessment**

Sampling of learner performance plays an important part in assessment in competency based education. No matter which assessment methods are used, the full range of knowledge, skills and attitudes stipulated in the curriculum module can never be fully assessed. Not only do cost and time prohibit it, but it is important to see that vocational education and training is devoted to more than just testing. While learner performance is the basic criterion for assessment, it is essential that this performance be assessed in a holistic way, rather than as a series of tests undertaken in isolation from each other.

The National Training Board’s method of breaking a *unit of competence* into *elements of competence* and
performance criteria is widely accepted, as is the curriculum format of specifying a module purpose, learning outcomes and assessment criteria. However, the way in which learning outcomes and their related assessment criteria should be assessed is a discussion point. This raises several issues about assessment practices, including:

- What aspects of a module should be assessed; the purpose, each learning outcome, or each assessment criterion?

- How many times should assessment take place to demonstrate achievement?

- Over what period of time should assessment take place?

- In what context should assessment take place?

On the basis of current (1992) research and literature studies, three principles that can guide resolution of these issues are:

- Assessment practices have to be effective and efficient

- Assessment should be an integral part of the teaching and learning of process

- Assessment should not dominate teaching and learning

If assessment practices are going to satisfy these principles, assessment must be holistic. A holistic approach to assessment works best when assessment focuses on learners demonstrating they are competent in the module as a whole, or in entire learning outcomes. It is not necessary to individually assess every assessment criterion within a learning outcome as this is inefficient. Furthermore, assessing each assessment criterion independently may give a misleading assessment of a learner's achievement.

The assessment criteria will be used by the teacher or facilitator as a guide when designing assessment items.
Developing an Assessment Strategy

Here is a method for developing an assessment strategy for a module.

1. Draw up a table with a number of rows and columns.

2. List the range of assessment methods that could be used to assess learners in the left hand column, one method on each row.

3. Label each column with the number of each learning outcome, or a brief statement of each learning outcome.

4. Refer to the assessment method nominated in the syllabus for each learning outcome and place a cross in the box where the assessment method and appropriate learning outcome intersect.

Assessment Methods

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Learning Outcome</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Objective Test</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practical Test</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>On Job Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Assignment</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Personal Appraisal</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral/Aural Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Look at each assessment method in turn, and the learning outcomes that can be assessed by that method.

Is it possible to assess achievement of these learning outcomes by that assessment method in the same assessment event?
In this example:

- Learning Outcomes 1, 2, 4 and 5 may be assessed by a written objective test.
- Learning Outcomes 2, 3 and 4 may be assessed by a practical test
- Learning Outcomes 3, 4 and 5 may be assessed by an assignment.

Is it possible to assess learner achievement of this module by:

- one written objective test
- one practical test
- one assignment

instead of ten separate assessments, as may be implied by the syllabus document?

If this is not possible, can Learning Outcomes be grouped together for assessment purposes?

For example,

- Learning Outcomes 2 and 3 may be assessed by one practical test and Learning Outcome 5 by another practical test.

6. Complete the 'Method' and 'Learning Outcomes' columns of the Assessment Strategy table.

<table>
<thead>
<tr>
<th>Method</th>
<th>Learning Outcomes</th>
<th>Timing</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Objective Test</td>
<td>1, 2, 4, 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical Test</td>
<td>2, 3, 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment</td>
<td>3, 4, 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Can you give some indication of when learners would be able to complete this assessment satisfactorily?
This estimate will be based on your experience and judgement and should indicate when an 'average' learner should be able to demonstrate a satisfactory performance.

A suitable unit of timing would be the classes in which assessment could be scheduled, or the proportion of the module that would have been completed before each assessment event was held. For example, 'Classes 6-8' or 'after 50% of module completed', etc. Note that repeat assessments may need to be offered, and that the timing of assessments, especially in self-paced learning situations, needs to be flexible. However, learners must have sufficient notice of when they will be assessed and the scope of that assessment.

Activity

Refer to Worksheet 4.3 (2)

For the curriculum module that you are developing

- list the learning outcomes that can be assessed by each assessment method
- within each assessment method, group together the learning outcomes that can be assessed in the same assessment event
- estimate the stage of the module at which learning should be able to complete each assessment event.

Grading Assessment Events

Criterion referenced assessment

- distinguishes between learners who have achieved stated learning outcomes and those who have not
- provides an objective, reliable and valid measure of a learner's ability to perform a task

- indicates whether an educational program is successful in producing workers who can achieve job performance requirements

- provides information on the maintenance, over time, of quality education

- is the recommended form of assessment in competency based education.

In criterion referenced assessments

- the performance of each learner is compared with specific criteria

- the standard is determined before the test is administered

- students are often graded as 'satisfactory' or 'not yet satisfactory'.

However, studies are showing that:

- students wish to have excellence in performance acknowledged

- students want certification that shows more than simply 'satisfactory'

- employers want to have some basis for comparing learner achievement

- 'satisfactory' gradings only will not engender a commitment to excellence

Within the framework of competency based education and training it is possible to have graded assessment.

In a graded assessment strategy

- all learners must satisfy the stated criteria to obtain a 'satisfactory' result (satisfactory, C grade, etc.)

- those who satisfy the criteria at a higher standard, or who satisfy criteria at a higher level, can be
given a higher grade (good, excellent; B grade, A grade, etc.)

Activity

Refer to Worksheet 4.4

The worksheet contains four case studies outlining some assessment strategies. Read through each case study and highlight the key issues and any deficiencies and attributes of the assessment strategies.

Case Study 1

The course consists of five modules and each module comprises six learning outcomes.

Learners undertake a written test of objective and short answer questions for each learning outcome. To be assessed as 'satisfactory', learners must achieve 80% in each test so there is no final test.

Learners who gain more than 90% on the first attempt receive a 'Distinction'; those who gain 80-90% on the first attempt receive a 'Credit'. Those who do not achieve 80% are given feedback, directed to further study, and given a similar test until they achieve at least 80% but only receive a 'Pass' grade.

Assignments are intended to assess the material covered in a module and allow learners to relate this material to their own work situation. Assignments are graded as 'Satisfactory' only, but learners would prefer a grading system, such as 'Pass', 'Credit' and 'Distinction' as they feel that the present system is deficient in not catering for learner excellence.

Case Study 2

The course consists of 15 modules in three levels with some modules being prerequisites for other modules.
Assessment consists of:

- self-assessment tests, which do not contribute to the final mark

- three sub-tests in each module, covering all the preceding work in the module

- a final test in each module

- an assignment, which requires integration of practical and theoretical aspects of the module

- practical on the job assessment of a list of skills undertaken throughout the modules.

The tests are graded on a pass, credit and distinction format. The practical on the job assessment is assessed as 'satisfactory' or 'not yet satisfactory'. Some checklists have been developed to help teachers mark assignments. Where these have not been developed, the professional competence of the teacher is used. Assignments are marked as 'satisfactory' or 'unsatisfactory', based on the learning outcomes and assessment criteria for the module.

Learners believe that they are over-assessed. There are three tests per module, as well as a final module test. The second and third tests assess work covered in prior tests and the final test is seen as a repetition of the third test. Standards of assessment in the practical on the job assessment vary considerably between employers.

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**Case Study 3**

The program offers 60 modules leading to awards at Advance Certificate, Associate Diploma and Diploma levels.

A variety of assessment methods is used, including:

- assignments, for each topic within a module.

Assignments are multiple choice and short answer questions which are corrected by a teacher, but do not count towards the final competency grading.
• a project for each module which consists of a series of short answer questions and a task.

• a 'final examination' for each module, conducted under examination conditions.

The project and the final examination each count as half of the final assessment. To complete a module satisfactorily, learners must achieve a score of 85% in the project and the module test.

These standards are believed necessary to produce a high quality workforce. While learners agree with the need to produce a high quality workforce, they believe the 'pass' mark is very high and they are spending time on assessment activities at the expense of learning experiences.

**Case Study 4**

The course consists of modules that are competency based and fully self paced. Students who do not complete the course in the nominal duration must pay an hourly fee for the additional time spent at the College to complete the course. Teaching and assessment occurs on a one-to-one basis.

At the end of each unit (part of module), learners must complete a computer readiness test to a satisfactory level before they can be assessed by a teacher.

Almost all assessment is teacher-centred and involves no written work for the learner. Usually, the teacher watches a learner conduct a practical exercise and orally questions the student throughout the exercise. Although there are no written guidelines on testing, teachers refer to the learner's computer readiness test as a guide to the depth of questioning they should use. Learners who score high on the computer pre-test will be questioned less than those who score lower. No question banks are used and teachers are not given sample questions or guidelines on the number of questions that should be asked.

At the end of each off-the-job period (block, term, semester), a list of the learning outcomes achieved by learners is sent to their employers so that the
employer can check if learners are able to perform task on-the-job.

Some key issues about assessment strategies arise from these case studies. (Numbers refer to case study)

1. Where assignments are used to assess learning, clear guidelines have to be prepared that state the criteria which determine the levels of achievement.

   Learners need to understand how competency based education and assessment differ from traditional education methods, and how these differences may affect the way they are trained and assessed.

   Support for learners involved in on-the-job training and assessment is important as the quality of the support is reflected in their overall achievement.

   Learners feel that excellence in achievement should be recognised and acknowledged.

   It is necessary to decide how excellence in learning achievement is going to be recognised since this is an important motivational factor in the learning process.

2. Programs that incorporate on-the-job training and assessment are highly valued by learners and employers.

   Over-assessment is unnecessary, inequitable, highly cost-ineffective, and causes learners unwarranted stress.

   Both employers and students feel grades are necessary to reward student excellence.

3. Assessment in a module should not be so intense or time consuming that it becomes the major focus of the module.
In developing written assessment events, such as assignments and projects, course developers should take into account the amount of time learners will have to spend on a task to achieve a satisfactory level of achievement. As a guide, assessment should take up about 10% of the nominal duration of the module.

Teaching, learning and assessment should reflect work conditions. For example, if an operation is computerised on the job, being taught and assessed on a manual system would disadvantage the learner.

4. Where on-the-job assessment is totally teacher-centred, and one-to-one, learners may experience delays and frustration in waiting to be assessed, and the assessment process will be very time consuming.

Learning standards (learning outcome, assessment criteria, conditions, assessment methods) should be written so as to be easily understood, precise and unambiguous so that both teachers and learners can be certain what is expected to demonstrate learning achievement.

Assigning Weightings to Assessments

One way to assign weightings to assessment events is to examine the learning outcomes, and the assessment criteria for each learning outcome, and assign a relative weight to the item in each box of the matrix.

As you work through the learning outcomes and assessment criteria,

- place ticks in the corresponding boxes of the matrix, each tick representing an item to be assessed, or the degree of importance of the item to be assessed.

The amount of learning required will be a reasonable guide.
• using '100 points' as your base figure, allocate points to each box containing an assessment event, usually based on the number of ticks.

• reallocating points until you are satisfied that you have used all 100 points in a satisfactory and equitable way.

• add the points horizontally and vertically and make minor adjustments so that the totals are 'realistic'; that is, rounded percentages (5, 10, 20, 25 etc).

You can now complete the Assessment Strategy.

8. Transfer these weightings to the 'weighting' column of the Assessment Strategy table.

9. Add any conditions that must be met to gain a 'satisfactory' or better assessment.

For example,

• to gain a minimum 'satisfactory' assessment, learners must gain x% in the written test and y% in the assignment and must satisfy all assessment criteria in the practical test.

• to gain a 'credit' assessment, learners must ..... 

• to gain a 'distinction' assessment, learners must ......

10 Check to see that the assessment strategy matches the purpose of the module.

Refer to the purpose of the curriculum module. How well will learners be able to show that they have achieved the purpose of the module if they successfully complete the assessment strategy that you have proposed?
Activity

Refer to Worksheet 4.3.

For the curriculum module that you are developing, assign a weighting to each of the assessment events in the assessment matrix.

Add any conditions that must be met to gain a satisfactory result or a higher graded assessment.

Check your assessment strategy.

Is it:

- Valid
- Reliable
- Fair
- Practicable

Key Points

- Learning outcomes, assessment criteria and conditions statements should specify clearly what learners are expected to achieve.

- Assessment methods should be valid, reliable, fair and efficient.

  - Assessment practices should be appropriate for the knowledge, skills and attitudes being assessed.

  - Assessment tasks should reflect what is required in the workplace.

  - Provide detailed assessment guidelines so that assessment practices can be implemented consistently.

  - Cut off scores should reflect the knowledge, skills and attitudes being taught, rather than an arbitrary figure.
• Adopt a holistic approach to assessment

• Use assessment methods that assess learning outcomes in an integrated way.

• Do not assess assessment criteria in isolation from each other.

• It is not necessary for learners to demonstrate that they have satisfied every assessment criterion for a learning outcome.

• Competence should be recognised no matter how or where it was acquired.

• Learners should not have to undertake parts of a course of study if they can demonstrate that they can already satisfy the learning outcomes.

• Assessment practices should match as closely as possible what happens on the job.

• Where possible, assess students in as realistic a situation as possible, such as on-the-job or in a work simulation. This allows them to show that they have integrated knowledge, skills and attitudes.

• Use the most appropriate methods for assessing learning achievement.

• Learners should be encouraged to monitor their own learning.

• Provide opportunities for self-appraisal and peer appraisal.

• Assessment practices should be part of the teaching and learning approach.

• Assessment practices should only examine the learning outcomes within a module.

• Assignments allow learners to relate learning to their own work situation.

• Assessment provides timely and meaningful feedback to learners.

4. Recommending Assessment Methods and Strategies
• Assessment is a time consuming process and learners should not be encouraged to undertake it unless they are prepared.

• Whether or not a module will have a graded assessment will be determined during the course design and will be specified for the module developer.

Review and complete details of assessment methods and an assessment strategy for the curriculum module that you are developing.
5 Suggesting Module Content

Learning Outcome
By completing this unit, you will be able to suggest module content that is appropriate to the learning outcomes of the curriculum module.

Assessment Criteria
To show that you have achieved this learning outcome, you must be able to:

1. Select content material that covers the knowledge, skills and attitudes needed to satisfy the assessment criteria.

2. Include content material that will help participants to develop task skills, task management skills, transfer skills, contingency management skills and work environment skills.

3. Express module content as learning objectives that are derived from learning outcomes and assessment criteria.

4. Sequence module content in ways that will assist learning.

About this unit
This unit will help you to give teachers and learners an indication of appropriate material that they will need to learn to satisfy the assessment criteria and achieve the learning outcomes of the module. You will learn how to provide sufficient detail of the suggested content, and to focus it on the learning outcomes, and ways of sequencing module content to assist teachers and learners.
In this program so far, you have:

- identified the competency standards to be addressed by the curriculum module
- specified the learning outcomes and assessment criteria for the module
- recommended assessment methods and strategies for the module.

The next steps in the curriculum model are to suggest:

- what to teach, or learn
- how to teach, or learn
- what to use to teach, or learn.

This unit is titled 'Suggesting Module Content' because it is a guide to the teacher and/or learner. This part of the curriculum document helps learners to achieve the learning outcome. Learners would not be able to achieve the learning outcomes of some modules unless they followed the suggested content. In other modules, however, it may be quite feasible for them to achieve the learning outcomes by using quite different content. This is more likely to be the case with process related outcomes rather than product related outcomes.

Identifying Appropriate Module Content

To work out the content of the module, answer the question:

"What does the learner need to be able to do to satisfy each assessment criterion?"

To satisfy each assessment criterion and achieve the learning outcome, learners may need to cover the cognitive, affective and psychomotor domains of learning and to acquire and develop:

- knowledge
- skills
- relevant behaviour

A method for identifying possible module content is
to take each assessment criterion in turn and write down

- what learners need to know, understand, apply, analyse, synthesise, or evaluate
- what learners need to do
- how learners need to behave or feel, especially about occupational health and safety, workplace responsibilities and commitment to excellence

to satisfy the assessment criterion.

Refer to the lists of knowledge, skills and attitudes that you generated when writing the assessment criteria and use these as a guide. Check that you have included material that will help learners to develop and achieve

- task skills
- task management skills
- transfer skills
- contingency management skills
- work environment skills

### Specifying Learning Objectives

By writing the module content as learning objectives, you describe what learners should be able to do so that they will satisfy the assessment criteria.

A learning objective is made up of:

```
Activity + Focus of that Activity
```

<table>
<thead>
<tr>
<th>Examples:</th>
<th>Activity</th>
<th>Focus of the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain</td>
<td>the function of the lubricating oil</td>
<td></td>
</tr>
<tr>
<td>Demonstrate</td>
<td>how to apply the bandage</td>
<td></td>
</tr>
<tr>
<td>Justify</td>
<td>selection of the equipment</td>
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</tbody>
</table>

5. Suggesting Module Content
By describing the module content in terms of what learners should be able to do, you are telling both the teacher and the learner what is to be learned, and the result of that learning.

How you describe what learners should be able to do depends on whether the content relates to:

- knowledge, understanding and intellectual skills
- skills, especially physical skills
- behaviour, attitudes, feelings, and values

Make sure that you cover these three domains adequately.

Because attitudes, feelings, values and behaviours are more subjective than knowledge and skills, it is more difficult to prescribe a standard of achievement in these areas. Where attitudes have been identified, they can be combined with more concrete objectives.

---

**Examples:**

- Operate a chain saw, observing safety regulations.
- Evaluate the proposals, and consider the environmental effects.

---

In the three areas, or *domains of learning*, different levels of learning are possible. The levels of the learning objectives must be appropriate to the assessment criteria.

---

**Examples**

In the knowledge area, or *cognitive domain*,

- lower level objectives ask learners to *list, name, recall, describe*
- higher level objectives ask them to *apply, analyse, compare, contrast, explain, justify, evaluate*.
## LEVELS AND DOMAINS OF LEARNING

| LEVEL     | COGNITIVE DOMAIN                                                                                                                                                                                                 | PSYCHOMOTOR DOMAIN                                                                                                                                                                                                 | AFFECTIVE DOMAIN                                                                                                                                                                                                 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AWARENESS | Knowledge: The Graduate Knows: common terms; specific facts; methods and procedures; basic concepts; principles  
Task Verbs to Use: defines; describes; identifies; labels; lists; matches; names; outlines; reproduces; selects; states                                                                 | Imitation: Task Verbs to Use: (varying quality of outcomes) assembles; builds; calibrates; constructs; corrects; creates; designs; dismantles; drills; fastens; fixes; follows; grinds; hammers; heats; hoods; identifies; locates; makes; manipulates; mends; mixes; nails; paints; sands; saws; sharpens; sets; sews; sketches; starts; stirs; uses; weighs; wraps.  
Responding: The Graduate: listens attentively; shows awareness of the importance of learning; shows sensitivity to human needs and social problems; accepts differences of race and culture; attends closely to the classroom activities.  
Task Verbs to Use: asks; chooses; describes; follows; gives; holds; identifies; locates; names; points to; selects; sits erect; replies; uses  
Responding: The Graduate: completes assigned work; obeys set rules; participates in group discussion; completes laboratory work; volunteers for special tasks; shows interest in topics; enjoys helping others  
Task Verbs to Use: answers; assists; complies; conforms; discusses; greets; helps; labels; performs; practices; presents; reads; recites; reports; selects; tells; writes.                                                                 |                                                                                                                                                                                                                     |
| BASIC     | Comprehension: The Graduate: understands facts and principles; interprets verbal material; interprets charts and graphs; translates verbal material to mathematical formulae; estimates future consequences implied in data; justifies methods and procedures  
Task Verbs to Use: converts; defends; distinguishes; estimates; explains; extends; generalises; gives examples; infers; paraphrases; predicts; rewrites; summarises  
Manipulation: Task Verbs to Use: (varying quality of outcomes) assembles; builds; calibrates; changes; cleans; composes; connects; constructs; corrects; creates; designs; dismantles; drills; fastens; fixes; follows; grinds; hammers; heats; hooks; identifies; locates; makes; manipulates; mends; mixes; nails; paints; sands; saws; sharpens; sets; sews; sketches; starts; stirs; uses; weighs; wraps  
Responding: The Graduate: completes assigned work; obeys set rules; participates in group discussion; completes laboratory work; volunteers for special tasks; shows interest in topics; enjoys helping others  
Task Verbs to Use: answers; assists; complies; conforms; discusses; greets; helps; labels; performs; practices; presents; reads; recites; reports; selects; tells; writes. |                                                                                                                                                                                                                     |
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>COGNITIVE DOMAIN</th>
<th>PSYCHOMOTOR DOMAIN</th>
<th>AFFECTIVE DOMAIN</th>
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<tbody>
<tr>
<td>INTERMEDIATE</td>
<td><strong>Application:</strong> The Graduate: applies concepts and principles to new situations; applies laws and theories to practical situations; solves mathematical problems; constructs charts and graphs; demonstrates correct usage of a method or procedures</td>
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<td><strong>Task Verbs to Use:</strong> changes; computes; demonstrates; discovers; manipulates; modifies; operates; predicts; prepares; produces; relates; shows; solves; uses</td>
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<td><strong>Analysis:</strong> The Graduate: recognises unstated assumptions; recognises logical fallacies in reasoning; distinguishes between facts and inferences; evaluates the relevancy of data; analyses the organisational structure of a work (art, music, writing)</td>
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<td><strong>Task Verbs to Use:</strong> breaks down; diagrams; differentiates; discriminates; distinguishes; identifies; illustrates; infers; outlines; points out; relates; selects; separates; subdivides</td>
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<td></td>
<td><strong>Precision:</strong> <strong>Task Verbs to Use (with varying quality of outcomes):</strong> assembles; builds; calibrates; changes; cleans; composes; connects; constructs; corrects; creates; designs; dismantles; drills fastens; fixes; follows; grinds; hammers; heats; hooks; identifies; locates; makes; manipulates; mends; mixes; nails; paints; sands; saws; sharpens; sets; sews; sketches; starts; stirs; uses; weighs; wraps</td>
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<td><strong>Valuing:</strong> The Graduate: demonstrates belief in the democratic process; appreciates good literature (art, music); appreciates the role of science (or other subjects) in everyday life; shows concern for the welfare of others; demonstrates problem-solving attitude; demonstrates commitment to social improvement</td>
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<td><strong>Task Verbs to Use:</strong> completes; describes; differentiates; explains; follows; forms; initiates; invites; joins; justifies; proposes; reads; reports; selects; shares; studies; works</td>
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<td><strong>Organisation:</strong> The Graduate: recognises the need for balance between freedom and responsibility in a democracy; recognises the role of systematic planning in solving problems; accepts responsibility for own behaviours; understands and accepts own strengths and limitations; formulates a life plan in harmony with own abilities, interests and beliefs</td>
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<td><strong>Task Verbs to Use:</strong> adheres; alters; arranges; combines; compares; completes; defends; explains; generalises; identifies; integrates; modifies; orders; organises; prepares; relates; synthesises</td>
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<tr>
<td>LEVEL</td>
<td>COGNITIVE DOMAIN</td>
<td>PSYCHOMOTOR DOMAIN</td>
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<tr>
<td>ADVANCED</td>
<td>Synthesis: The Graduate: writes a well organised structure theme; gives a well organised speech; writes a creative short store (or poem, or music); proposes a plan for an experiment; integrates learning from different areas into a plan of solving a problem; formulates a new scheme for classifying objects (or events, or ideas)</td>
<td>Articulation: Task Verbs to Use (with varying quality of outcomes): assembles; builds; calibrates; changes; cleans; composes; connects; constructs; corrects; creates; designs; dismantles; drills; fastens; fixes; follows; grinds; hammers; heats; hooks; identifies; locates; makes; manipulates; mends; mixes; nails; paints; sands; saws; sharpens; sets; sews; sketches starts; stirs; uses; weighs; wraps</td>
<td>Characterisation by value or value complex: The Graduate: displays safety consciousness; demonstrates self-reliance in working independently; practices co-operation in group activities; uses objective approach in problem solving; demonstrates industry, punctuality and self-discipline; maintains good health habits</td>
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<td>Task Verbs to Use: categorises; combines; compiles; composes; creates; devises; designs; explains; generates; modifies; organises; plans; rearranges; reconstructs; relates; reorganises; revises; rewrites; summarises; tells; writes</td>
<td></td>
<td>Task Verbs to Use: acts; discriminates; displays; influences; listens; modifies; performs; practices; proposes; qualifies; questions; revises; serves; solves; uses; verifies</td>
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<td>Evaluation: The Graduate: judges the logical consistency of written material; judges the adequacy with which conclusions are supported by data; judges the value of work (art, music, writing) by internal criteria; judges the value of a work (art, music, writing) by use of external standards of excellence</td>
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<td></td>
<td>Task Verbs to Use: appraises; compares; concludes; contrasts; criticises; describes; discriminates; explains; justifies; interprets; relates; summarises; supports</td>
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Original source Bloom (1956), Krathwohl (1964) and Harrow (1972).
In the manipulative skills area, or *psychomotor domain*,

- lower level objectives ask learners to *operate, connect, mix, cut, weigh*

- higher level objectives ask them to *construct, devise, assemble, design, compose, create*

In the behaviour area, or *affective domain*,

- lower level objectives ask learners to *comply with, perform, conform to*

- higher level objectives ask learners to *discriminate, influence, question.*

Check that the level of each learning objective is:

- consistent with the assessment criteria

- reasonable in terms of the nominal time available

- appropriate to the skill level of the learners

Apply the SMART concept to Learning Objectives. Check the Learning Objectives to make sure that they are:

- S pecific
- M easurable
- A chievable
- R elevant
- T rackable

**Sequencing Learning Objectives**

By sequencing the content in an appropriate way, the learners are given a logical order for completing learning activities that will develop the necessary knowledge, skills and behaviour.

Some ways of sequencing the learning objectives are:
• Job Performance; the learning sequence is the same as the job sequence

• Spiral; similar objectives are ‘revisited’ with an increasing degree of complexity, or to illustrate different perspectives.

• Chronological; the learning sequence follows the order in which events occur in time

• Cause and effect; objectives are sequenced from the cause to the effect, or from the effect to its underlying causes

• Critical sequence; objectives are sequenced in terms of their relative importance

• Simple to complex; objectives are sequenced in terms of increasing difficulty or complexity

• Comparative sequence; familiar topics are covered before unfamiliar ones

• Reward sequence; unpleasant activities precede more pleasant ones

Activity

Refer to Worksheet 5.1

Use the process described in this unit to suggest appropriate content for a learning outcome.

Write the content as statements that describe what learners should be able to do so that they will satisfy the assessment criteria.

Place the learning objectives in an appropriate sequence.

Check that the content is written as SMART learning objectives.
Key Points

• The content of this unit can be expressed as learning objectives that are derived from the learning outcome and assessment criteria.

Learning Outcome

• The learning outcome of this unit was that

  • Learners will be able to suggest appropriate content to achieve the learning outcomes of the curriculum module.

Assessment Criteria

• The assessment criteria were to be able to

  • select content material that covers the knowledge, skills and attitudes needed to satisfy the assessment criteria

  • include content material that will help learners to develop task skills, task management skills, transfer skills, contingency management skills and work environment skills

  • express module content in the form of learning objectives that are derived from learning outcomes and assessment criteria.

  • sequence module content in ways that will assist learning.

Learning Objectives

• From that, the unit content was written as learning objectives.

  • Discuss the need to cover the cognitive, affective and psychomotor domains of learning.

  • Outline a method for identifying possible module content.

  • Explain why module content should be written as learning objectives.

  • Show how to write learning objectives.

  • Discuss the need to ensure that the levels of the...
learning objectives are appropriate to the assessment criteria.

- Apply the SMART concept to learning objectives.

- Discuss reasons for sequencing content and ways to do this.

- Use the process described in this session to suggest appropriate content for a learning outcome, express this content as learning objectives, and place these learning objectives in an appropriate sequence.

- The module purpose has been broken down progressively into smaller 'chunks' to make learning more manageable.

- There must be a logical development of knowledge, skills and behaviour so that prerequisite learning is achieved before subsequent learning.

For example,

- a learner should be able to identify and state the function of the vehicle controls, then operate the controls, before attempting to drive the vehicle.

- By stating the content to be covered as learning objectives, you have told the learners what they should be able to do to satisfy the assessment criteria and so achieve the learning outcomes.

Use the process recommended in this unit to suggest appropriate and relevant content for the curriculum module that you are developing.
6 Recommending Learning Strategies and Resources

Learning Outcome

By completing this unit, you will be able to recommend appropriate learning strategies, teaching methods and resources to achieve the learning outcomes of the curriculum module.

Assessment Criteria

To show that you have achieved this learning outcome, you must be able to:

1. Link the selection of appropriate learning strategies to how people learn.

2. Identify a range of learning strategies.

3. Choose learning strategies that are consistent with accepted principles of learning and contribute to achievement of the learning outcome.

4. Propose appropriate teaching methods for the module.

5. Specify a range of resources that will assist teaching and learning of the module.

About this unit

Having suggested 'what to teach, or learn', the next steps in the curriculum model are to suggest how to teach, or learn, and what to use to teach, or learn.
Again, this unit is about 'recommending' because it is a guide to the teacher and/or learner. This part of the curriculum document recommends ways through which learners can achieve the learning outcomes of the module.

Learning Profiles

There is a greater probability that learning will occur if the strategies used are compatible with the ways in which people learn.

*Do people learn in the same way? Is there one best way to learn?*

Activity

Refer to Worksheet 6.1

On the worksheet, complete the statement *'I learn BEST by ...'*

How do you learn best?

Think about yourself and how you like to learn.

Do you prefer

- reading a book in a quiet room?
- talking through ideas with other people?
- listening to someone knowledgeable?
- watching a demonstration or a film?

What sort of learning climate do you like best?

Do you prefer

- the 'cut and thrust' of debate and argument?
- to listen to reasonable statements?
- to hide away and learn by yourself?
The next part of this unit is based on some research literature on 'Learning Styles' to make the point that learners prefer to learn in different ways. These preferred ways of learning can be grouped together into four broad Learning Styles. These learning styles are not discrete and mutually exclusive; they are an indication of a person's most preferred way of learning and there are some common elements between various groups.

This section has been included to link individual learning styles to a model of learning so that this knowledge can be used in selecting appropriate learning strategies for the curriculum module being developed.

A person’s 'Learning Style' is an indication of how they see themselves as a learner. It does not measure their learning method with 100% accuracy, just their preferred ways of learning. Learning styles are not related to intelligence, mental ability or actual performance. 'Ability relates to 'what we know'; 'style' relates to 'how we know it'. Learning styles are 'value neutral'; there is no 'one best way to learn'.

From research and observation, four broad groups of learners have been described.

**'Dynamic' learners**

- The 'DYNAMIC' learners who learn best by:
  - doing things
  - carrying out plans and experiments
  - involving themselves in new experiences
  - taking risks
  - adapting to specific circumstances
  - solving problems in an intuitive, trial and error way
  - relying on other people for information rather than their own analytic ability

**'Innovative' learners**

- The 'INNOVATIVE' learners who learn best by:
  - looking at situations from many perspectives
  - generating ideas
  - being creative
  - using their imaginative ability
  - being interested in people
‘Analytic’ learners

- The ‘ANALYTIC’ learners who learn best by:
  - intuitive reasoning
  - thinking things through
  - working through logically sound and precise information
  - creating theoretical models

‘Common Sense’ learners

- The ‘COMMON SENSE’ learners who learn best by:
  - solving problems
  - applying ideas to practical situations
  - focusing knowledge on specific problems
  - dealing with things rather than people

*Based on how you said that you learn best, do you see yourself as belonging to one of these groups, or do you belong to more than one group?*

Learning Characteristics

There are some characteristics that seem to be correlated with particular learning modes.

- DYNAMIC and INNOVATIVE learners prefer
  - dealing with people
  - being sensitive to values
  - being sensitive to people’s feelings
  - being personally involved
  - working in groups

- ANALYTIC and COMMON SENSE learners prefer
  - testing theories and ideas
  - analysing quantitative data
  - experimenting with new ideas
  - designing experiences
  - generating alternative ways of doing things
  - building conceptual models

- DYNAMIC and COMMON SENSE learners prefer
  - making decisions
  - seeking and exploiting opportunities
  - setting goals
  - committing self to objectives
  - adapting to changing circumstances
  - influencing and leading others
• INNOVATIVE and ANALYTIC learners prefer
  • gathering information
  • organising information
  • listening with an open mind
  • seeing how things fit the big picture
  • developing comprehensive plans
  • recognising implications of situations

Curriculum Implications

What are the implications for curriculum development of learners having different learning styles?

• The teaching guide needs to be flexible and responsive enough to deal with a wide variety of learning styles.

• The curriculum should suggest a variety of activities, each of which facilitates a different learning style.

• Teachers must be able to use learning strategies that are responsive to individual styles.

• There is no 'one best way' to learn. Each strategy is appropriate for some learners, in some settings, and for some content.

• All learning styles must be recognised and planned for if all learners are to learn to the best of their ability.

• While people prefer to use a particular learning style, they also use other styles, although less often and perhaps less productively.

• Very often when suggesting teaching methods and learning strategies, the methods and approaches that spring to mind are the very ones with which the curriculum writers feel comfortable and have used before. Not everyone who teaches the module, or is a learner, will feel comfortable with them, or be able to learn best from them.

• Curriculum developers must make a conscious effort to suggest a variety of learning strategies. Curriculum developers, and teachers, do not write or teach as they were taught. They tend to write, or teach, the way they learn best themselves.
A Learning Model

So far, you have identified that:

- individuals prefer to learn in different ways
- these ways can be grouped into four broad learning styles
- there are some common characteristics between these learning styles.

"What do you have to do to learn something?"

Example: Learning to play tennis

To learn how to play tennis, you could

- *Be introduced* to tennis by

  - watching other people play
  - watching matches on TV
  - reading a newspaper or sports magazine

- *Get to know* about the game by

  - reading a book
  - watching a video
  - having some lessons
  - checking out equipment and colleagues about the game

- *Try out* your learning by

  - hitting a tennis ball against a wall
  - practising serves in the garden
  - hitting a practice ball
  - playing a game with a friend

- *Get feedback* on your learning by

  - missing the ball
  - breaking a window
  - getting a serve ‘in’
  - scoring points
  - winning a game
• Apply what you have learnt by
  • playing social games
  • joining a competition

To learn something, you must
• Be introduced

This is the stimulus to learn; learners need to know enough about the topic to make them want to learn.

• Get to know

This is the 'get to understand it' or 'how to do it' stage of learning. It should involve learners in listening, watching, asking questions, making notes, reading instructions, and working through exercises.

• Try out

To learn something you must do something to try out the knowledge or practise the skill. If learners don't 'try out' they will never know whether or not they know or can do 'it'.

This is the stage where what is really involved in learning about something or how to do something really becomes clear. In the teaching guide, you must provide opportunities for learners to put into practice what they are learning.

• Get feedback

Nothing will be learned without feedback. Feedback tells learners what they are doing right or wrong. To be of any value feedback must tell learners why what they are doing is right or wrong. The teaching guide must give opportunities for learners to receive useful feedback on their learning.
• **Apply**

The true test that learners have learned something comes when they can apply it to real life situations.

The stages of this learning model are not simple, sequential steps. Often learners need to repeat a previous stage, so the model is a loop or spiral. After 'getting feedback' learners may need to 'try out' again or even 'get to know it' better. Unless learners reach the 'apply it' stage they are more likely to forget what they have learned.

*How many things have you 'learned' and, never having applied them, forgotten them?*

*On the other hand, think about some of the things you have learned and applied, and, even though you may not have used them for some time, they are easy to recall when you have to do so.*

This model applies to 'thinking' topics as well as 'doing' topics.

---

**Example: Dealing with stress**

• **Be introduced**

• An article in a newspaper, magazine or journal catches your attention.

• **Get to know**

• You do a literature search and read about causes of stress, the stress process, effects of stress, causes of stress in the workplace.

• **Try out**

• You discuss the article with work colleagues and friends.
• Get feedback
  • Some agree that dealing with stress is an important factor in maintaining a healthy lifestyle.
  • Others disagree with your interpretation of some of the data.

• Get to know (again)
  • You read the articles again.
  • You read several other articles.
  • You ask several people for their views on ways of dealing with stress.

• Try out (again)
  • You discuss the topic with work colleagues again.

• Get feedback (again)
  • Your colleagues are convinced by your arguments.

• Apply
  • You develop and use a plan for reducing personal stress.
  • You write an article for the College Newsletter.

Learning is an ordered, cyclical process and learning activities that do not follow this order are less productive. Feedback can only occur after the learner has done something. The later the action and feedback come in the learning activities, or the farther apart the action and the feedback, the less likely it is that the feedback will be effective.
Learning Strategies

There is a wide range of learning strategies that can be used to help people learn. These learning strategies can be used to achieve learning in different stages of the learning model.

Some of the more commonly used learning strategies are described on the following pages.

Activity

Refer to Worksheet 6.2.

Various learning strategies are listed down the left hand side of the worksheet and the first four stages of the 'learning model' are listed across the worksheet.

Think about each learning strategy. Place a tick in the appropriate column alongside each strategy if it can be used for learners to

- be introduced to a topic
- get to know a topic
- try out what they have learned about the topic.

If learners can 'get feedback' by using this learning strategy, list ways that this could be done (for example, from the teacher, other learners, checklists, resource material).
# Teaching and Learning Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Characteristics</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstration</td>
<td>One or more people show &quot;how it is done&quot;.</td>
<td>Participants passive, notoriously ineffective for improving participant skills, showing relevance and gaining an attitude of acceptance.</td>
<td>Skill to show correct procedures without offending.</td>
</tr>
<tr>
<td>Demonstration with Practice</td>
<td>Demonstration followed by an opportunity for participants to try.</td>
<td>One of the best means for learning simple skills, provided feedback follows immediately. Without performance feedback, participant is likely to be reinforced in doing procedure incorrectly.</td>
<td>Ability to break procedure down into simple communicable steps. Ability to provide helpful feedback. Patience.</td>
</tr>
<tr>
<td>Individual Reading</td>
<td>A tried and true method by no means outdated.</td>
<td>Useful to provide background knowledge. Participants active. Little up-front control.</td>
<td>Requires skill to select relevant material. Requires reading skill on part of participants.</td>
</tr>
<tr>
<td>Read and Discuss</td>
<td>Usually short reading assignment followed by small group discussion.</td>
<td>Requires more activity than individual reading. More up-front control if leader assigned to discussion group.</td>
<td>Same as for reading.</td>
</tr>
<tr>
<td>Group Discussion</td>
<td>Open discussion of a given topic in a small group. May or may not have assigned leader or time limit.</td>
<td>Participants active. Appointed group leaders may retain control.</td>
<td>Skills in giving instructions that will get discussion going and keep it on target.</td>
</tr>
<tr>
<td>Buzz Groups</td>
<td>Usually short discussions of a given topic; set time limit; no leader. Normally groups of three or four people.</td>
<td>Usually groups asked to report conclusions back to larger groups. Participants active.</td>
<td>Ability to give clear, crisp instructions</td>
</tr>
<tr>
<td>Role Play</td>
<td>An unrehearsed, dramatic enactment of a response to a situation. A human encounter involving one or more persons in &quot;playing-like.&quot; Participants may either choose or be assigned roles. Roles may be written or merely outlined by leader. They may be specified or open to ad-lib.</td>
<td>Useful in practising communication skills when no one right answer will measure attainment of desired behaviour. Method requires a good deal of adultness on the part of participants and understanding on part of leader.</td>
<td>Skill of getting participants to accept roles, in creating climate of trust, in keeping them doing rather than saving. Requires sensitivity to stop role play when it is threatening or over-dramatic. Requires skill to help the group process their feelings and to provide helpful feedback.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>Simulations</td>
<td>Written roles and situational details trigger interactions similar to real life, contain a carefully arranged competitive element.</td>
<td>Designed to involve participant. Used for knowledge application and skills practice in problem analysis, decision-making, problem-solving.</td>
<td>Good, assertive, firm direction-giving ability. Knowledge of games to be used.</td>
</tr>
<tr>
<td>Games (Games and simulations often used synonymously)</td>
<td>Board game on which action takes place. Designed to simulate actions taken in real life. Usually specified set of rules for playing the game.</td>
<td>High involvement by participants. Need to extract the learnings for &quot;real life situations.&quot; Danger in participants becoming too involved in the &quot;game&quot; and neglecting the learning</td>
<td>Ability to see action in a total framework. Creativity to design the Game and Board</td>
</tr>
<tr>
<td>Lecture</td>
<td>Prepared verbal exposition by one speaker before an audience.</td>
<td>Can provide a lot of information quickly. Can be long. Participants passive.</td>
<td>Speaker should be interesting,</td>
</tr>
<tr>
<td>Lecture/Discussion</td>
<td>Lecture followed by question and answer session.</td>
<td>Provides some participant activity.</td>
<td>Can indicate direction of participant's interest.</td>
</tr>
<tr>
<td>Panel/Discussion</td>
<td>Planned conversation before an audience, usually 3 or more speakers and leader.</td>
<td>Brings more points of view. Some participant activity.</td>
<td>Leader needs to be diplomatic and have some way of organising interaction.</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Debate</td>
<td>Organised argument.</td>
<td>Control is up front. Participants passive except for hissing or applause.</td>
<td>Skills in formal debating.</td>
</tr>
<tr>
<td>Films</td>
<td>Provide content as well as entertainment.</td>
<td>May involve attitude learning as well as knowledge. Participants passive unless vicariously involved. Turning off lights. Provides opportunity for a nap.</td>
<td>Film must be relevant to topic and audience.</td>
</tr>
<tr>
<td>Videotapes</td>
<td>As for film but lights remain on.</td>
<td>Flexible start and stop for discussion.</td>
<td>Same as film, but require videotape player and sufficient monitors large enough for easy viewing.</td>
</tr>
<tr>
<td>Brain Storming</td>
<td>A method of problem-solving (or listing) in which group members suggest in rapid-fire order all the possible solutions (or problems) they can think of. Criticism and discussion are ruled out while suggestions are being made. Often set time limit. Evaluation follows listing.</td>
<td>Intensely participant-active. More ideas and a wider range of ideas than generated by a typical discussion.</td>
<td>The ability to communicate the ground rules and enforce them. Ability to accept &quot;far out&quot; ideas.</td>
</tr>
<tr>
<td>Case Study</td>
<td>In Tray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>An account of a problem situation including sufficient detail to make it possible for groups to analyse the problems involved.</td>
<td>Provides a simulated situation drawn from real life which gives participants an opportunity to apply previously learned knowledge. Participants active.</td>
<td>Requires both knowledge and skill needed to solve the problem. May require the skill to design your own case studies. Questioning skills also useful.</td>
<td></td>
</tr>
<tr>
<td>A form of case study in which letters, memos, phone messages, etc. are given to the participant playing an assigned role. They are given time to write actual responses to the items. After time has passed, participants form groups to discuss their work. Group leader may be assigned.</td>
<td>Time limit often provides pressure. Participants active. Allows participants to apply previously learned knowledge. The ability to communicate the ground rules and enforce them. Ability to accept &quot;far out&quot; ideas.</td>
<td>Knowledge of appropriate policies and ability to critique responses.</td>
<td></td>
</tr>
</tbody>
</table>
Worksheet 6.2

Your results on Worksheet 6.2 should look something like this:

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Be Introduced</th>
<th>Get to Know</th>
<th>Try Out</th>
<th>Get Feedback from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend lecture</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watch film or video</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read book, notes</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend seminar</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask questions</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watch demonstration</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry visit</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical exercises</td>
<td></td>
<td></td>
<td>Y</td>
<td>Teachers, peers, checklists, models</td>
</tr>
<tr>
<td>Field work</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, supervisor</td>
</tr>
<tr>
<td>Answer questions</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, peers</td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Teacher, peers, resource material</td>
</tr>
<tr>
<td>Case study</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Teacher, peers, resource material</td>
</tr>
<tr>
<td>Problem centred group</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, peers, self</td>
</tr>
<tr>
<td>Simulation</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, peers, self</td>
</tr>
<tr>
<td>Role play</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, peers, self</td>
</tr>
<tr>
<td>Individual contract</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Teacher, self</td>
</tr>
</tbody>
</table>

Some learning strategies (lectures, videos and films, demonstrations) do not take the learner beyond the 'be introduced' and 'get to know' stages of learning and
are ineffective when used alone or with similar strategies. Other strategies (practical work) apply only to the 'try out' and 'get feedback' stages of the learning cycle and are ineffective in laying the foundations for learning to take place. The 'apply' stage usually happens in the workplace after education and training, but you can begin the process by suggesting different exercises with real life implications.

Selecting Learning Strategies

For each learning outcome you should recommend a range of learning strategies that will take learners at least through the first four stages of the learning model. Various learning strategies are preferred by learners with different learning styles.

• DYNAMIC learners prefer:

  Industry visits
  Interviews with experts
  Handling working models or examples
  Case studies
  Role plays
  Discussion
  Experiment and report
  Simulation
  Instructional game
  Project work

• INNOVATIVE learners prefer:

  Industry visits
  Interviews with experts
  Handling working models or examples
  Case studies
  Role plays
  Lectures
  Watching a video/film
  Reading and research
  Demonstration
  Assignment
  Building a model/poster
• ANALYTIC learners prefer:

Lectures  
Watching a video/film  
Reading and research  
Demonstration  
Assignment  
Building a model/poster  
Practical work  
Tutorial  
Computer based presentation  
Discussion  
Problem solving  
Test

• COMMON SENSE learners prefer:

Practical work  
Tutorial  
Computer based presentation  
Discussion  
Problem solving  
Test  
Experiment and report  
Simulation  
Instructional game  
Project work

These learning strategies will match the learning styles of different learners. By

• selecting strategies that will take learners through the stages of the learning model

• selecting at least one strategy from each of the four groups of learners

you will provide teachers who implement the curriculum module with appropriate suggestions for them to meet the learning needs of their learners and enhance their learners’ abilities to learn from a range of strategies.
Teaching Methods

Teaching methods are broad, descriptive terms that relate to the types of learning activities. The various learning strategies can be grouped into several suggested teaching methods that are used to allocate staff resources to teaching because some teaching methods require smaller learner:teacher ratios than other teaching methods.

The main teaching methods used in vocational education programs are:

- Modified lecture
- Integrated theory/practical
- Practical
- Computer based training
- Small group tuition
- Self-directed learning
- Industrial visits
- Field work
- Vocational experience
- Individual learning centres

Activity

Refer to Worksheet 6.3.

The worksheet lists teaching methods commonly used in vocational education programs and gives a brief description of each method.

In the spaces provided, write down:

- what you think the teacher could do when using this teaching method
- which learning strategies are suitable for use in this method of teaching.
# Teaching Methods and Learning Strategies

<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Teaching Activities</th>
<th>Learning Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modified Lecture</strong></td>
<td>So the teacher might:</td>
<td>Suitable learning strategies would be:</td>
</tr>
<tr>
<td></td>
<td>• speak for most of the lesson</td>
<td>lectures</td>
</tr>
<tr>
<td></td>
<td>• speak and encourage learner responses on some points</td>
<td>interview with experts</td>
</tr>
<tr>
<td></td>
<td>• speak and present relevant learner exercises to reinforce and review lesson content</td>
<td>brainstorms</td>
</tr>
<tr>
<td></td>
<td>• speak and set tasks on defined exercises for learners to work on independently</td>
<td>instructional games</td>
</tr>
<tr>
<td></td>
<td>• speak and, at certain times, divide the class into groups to work on defined exercises.</td>
<td>videos, films</td>
</tr>
<tr>
<td></td>
<td>A lesson delivered mostly as a lecture in which the teacher:</td>
<td>problem centred groups</td>
</tr>
<tr>
<td></td>
<td>• provides the essential content and context</td>
<td>seminars</td>
</tr>
<tr>
<td></td>
<td>• acts as the focus and stimulus for classroom activities</td>
<td>simulations</td>
</tr>
<tr>
<td></td>
<td>• guides and directs learner responses</td>
<td>role plays</td>
</tr>
<tr>
<td></td>
<td>Standard learner : teacher ratio 30:1</td>
<td>case studies</td>
</tr>
<tr>
<td></td>
<td>Teacher centred; limited learner interaction.</td>
<td>debates</td>
</tr>
<tr>
<td></td>
<td>Learner centred; teacher supported</td>
<td>assignments</td>
</tr>
<tr>
<td></td>
<td>Learners use structured activities to learn and practise skills safely.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The teacher:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• breaks down skills and tasks into manageable units</td>
<td>The learners:</td>
</tr>
<tr>
<td></td>
<td>• designs and demonstrates practical exercises</td>
<td>• practise and perform skills safely and effectively</td>
</tr>
<tr>
<td></td>
<td>• directs, guides, supports and assists learners</td>
<td>• manage tasks individually and with others</td>
</tr>
<tr>
<td></td>
<td>• manage the allocation and use of equipment and tools to meet learner needs and learning outcomes</td>
<td>• sequence tasks and processes</td>
</tr>
<tr>
<td></td>
<td>• constantly supervises the whole practical area, including learners, projects, activities and equipment, to ensure a safe, healthy and effective learning environment.</td>
<td>• establish work routines</td>
</tr>
<tr>
<td></td>
<td>Standard learner : teacher ratio 15:1</td>
<td>• develop and use self assessment skills</td>
</tr>
<tr>
<td></td>
<td>Practical</td>
<td>• develop and use analytical, diagnostic and evaluation skills.</td>
</tr>
<tr>
<td></td>
<td>Learner centred; teacher supported</td>
<td>Relevant learning activities include:</td>
</tr>
<tr>
<td></td>
<td>Learners use structured activities to learn and practise skills safely.</td>
<td>practical exercises</td>
</tr>
<tr>
<td></td>
<td>The teacher:</td>
<td>experiments and reports</td>
</tr>
<tr>
<td></td>
<td>• breaks down skills and tasks into manageable units</td>
<td>role plays</td>
</tr>
<tr>
<td></td>
<td>• designs and demonstrates practical exercises</td>
<td>simulations</td>
</tr>
<tr>
<td></td>
<td>• directs, guides, supports and assists learners</td>
<td>working models</td>
</tr>
<tr>
<td></td>
<td>• manage the allocation and use of equipment and tools to meet learner needs and learning outcomes</td>
<td>building models</td>
</tr>
<tr>
<td></td>
<td>• constantly supervises the whole practical area, including learners, projects, activities and equipment, to ensure a safe, healthy and effective learning environment.</td>
<td></td>
</tr>
<tr>
<td>TEACHING METHOD</td>
<td>TEACHING ACTIVITIES</td>
<td>LEARNING STRATEGIES</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Integrated Theory/Practical</td>
<td>During the lesson, the teacher:</td>
<td>Suitable learning strategies would be:</td>
</tr>
<tr>
<td>Learner centred; teacher directed and managed.</td>
<td>• provides the theoretical material and practical exercises, focusing on individual student needs</td>
<td>short lectures buzz groups</td>
</tr>
<tr>
<td>Teachers and learners work together to experience and explore theory and practice. The learning is planned, structured and managed so that each part complements the other.</td>
<td>• directs, guides and assists learners with their different projects and activities</td>
<td>brainstorm instructional games</td>
</tr>
<tr>
<td>To support the continuous integration of theory, demonstration and learner practice, learning takes place</td>
<td>• demonstrates, explains, and illustrates to the whole group, a small group, or individually</td>
<td>videos, films problem centred groups</td>
</tr>
<tr>
<td>• in a suitably equipped area, and/or</td>
<td>• supports learners in solving individual and group learning problems</td>
<td>demonstrations simulations</td>
</tr>
<tr>
<td>• where there is ready access to appropriate facilities during the lesson.</td>
<td>• manages the allocation and use of equipment and tools to meet learner needs and learning outcomes</td>
<td>role plays case studies</td>
</tr>
<tr>
<td>Standard learner: teacher ratio 15:1</td>
<td>• constantly supervises the whole practical area, including learners, projects, activities and equipment, to ensure a safe, healthy and effective learning environment.</td>
<td>practical sessions experiments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>working models building models</td>
</tr>
<tr>
<td>TEACHING METHOD</td>
<td>TEACHING ACTIVITIES</td>
<td>LEARNING STRATEGIES</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Computer Based Learning</td>
<td>The teacher:</td>
<td>The learners:</td>
</tr>
<tr>
<td>Learner centred and controlled</td>
<td>• assesses student achievement</td>
<td>• operate computers and software</td>
</tr>
<tr>
<td>Learners work individually on self-paced learning packages managed by computers. Teachers assist learners to use technology and progress through units of work.</td>
<td>• establishes a supportive, positive environment which promotes independent learning</td>
<td>• develop computer skills</td>
</tr>
<tr>
<td></td>
<td>• introduces new materials or equipment to students</td>
<td>• follow instructions and directions given in software units</td>
</tr>
<tr>
<td></td>
<td>• responds to students needs and enquiries</td>
<td>• respond to computer generated and controlled information</td>
</tr>
<tr>
<td></td>
<td>• demonstrates, explains, or illustrates computing or module skills</td>
<td>• work independently, with and around others</td>
</tr>
<tr>
<td></td>
<td>• conducts individual, small group and whole class sessions</td>
<td>• manage time needed and available to complete tasks</td>
</tr>
<tr>
<td></td>
<td>• modifies computer software packages to meet individual needs</td>
<td>• monitor and record their own progress</td>
</tr>
<tr>
<td></td>
<td>• copes simultaneously with learners using different programs, with varying content at different levels and stages</td>
<td>• complete assessment tasks independently</td>
</tr>
<tr>
<td></td>
<td>• observes students as they work and intervenes when necessary</td>
<td>• problem solve subject or computer based issues.</td>
</tr>
<tr>
<td></td>
<td>• monitors and records student programs</td>
<td></td>
</tr>
<tr>
<td>Standard learner : teacher ratio 15:1</td>
<td>• selects and develops appropriate resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• allocates time for contact with each learner during the session</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• encourages learners to self assess and review goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• supervises and manages the whole learning area</td>
<td></td>
</tr>
<tr>
<td>TEACHING METHOD</td>
<td>TEACHING ACTIVITIES</td>
<td>LEARNING STRATEGIES</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Small Group Tuition, Tutorial</strong></td>
<td>The teacher:</td>
<td>Relevant learning strategies would be:</td>
</tr>
<tr>
<td>Learner centred; teacher and learner directed</td>
<td>- establishes a supportive environment that promotes learning</td>
<td>problem centred groups</td>
</tr>
<tr>
<td>Teachers and learners work together, and learners work in small groups, on collaborative and cooperative learning activities.</td>
<td>- guides, assists and gives constructive feedback to learners</td>
<td>seminars simulations</td>
</tr>
<tr>
<td>Standard learner : teacher ratio 6:1</td>
<td>- focuses lesson content on each learner's learning needs</td>
<td>individual contracts</td>
</tr>
<tr>
<td></td>
<td>- supplements learning</td>
<td>tutorials assignments</td>
</tr>
<tr>
<td></td>
<td>- builds on learners' knowledge and experiences</td>
<td>project work reading and research</td>
</tr>
<tr>
<td></td>
<td>- encourages learners to develop and use self assessment strategies</td>
<td>distance learning</td>
</tr>
<tr>
<td></td>
<td>- assists learners to review goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- selects and develops appropriate learning resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- prepares learners for subsequent learning activities</td>
<td></td>
</tr>
<tr>
<td><strong>Field Work, Industrial Visits</strong></td>
<td>The teacher:</td>
<td>On field work, learners participate as a group</td>
</tr>
<tr>
<td>Field work and industrial visits expose learners to specialist equipment, materials, routines and codes of practice not able to be simulated in an educational institution.</td>
<td>- prepares learners by setting tasks and exercises that simulate the workplace</td>
<td>in exercises or activities usually associated with the job.</td>
</tr>
<tr>
<td></td>
<td>- introduces materials and situations to the classroom that anticipate the workplace visit or fieldwork</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- outlines relevant course and module outcomes to learners and industry</td>
<td>On industrial visits, learners observe routines, equipment or materials demonstrated by industry experts.</td>
</tr>
<tr>
<td></td>
<td>- supervises and directs learner activities during the fieldwork or visit</td>
<td>Relevant learning strategies are:</td>
</tr>
<tr>
<td></td>
<td>- leads discussions with learners about their observations and experiences</td>
<td>field trips industry visits</td>
</tr>
<tr>
<td></td>
<td>- monitors, records and assesses learners and the workplace.</td>
<td>project work interviews</td>
</tr>
<tr>
<td><strong>Standard learner : teacher ratio</strong> 8:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial visits, field trips 15:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEACHING METHOD</td>
<td>TEACHING ACTIVITIES</td>
<td>LEARNING STRATEGIES</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Self-Directed Learning</td>
<td>The teacher:</td>
<td>Learners:</td>
</tr>
<tr>
<td></td>
<td>• establishes a supportive environment that promotes independent learning</td>
<td>• work independently</td>
</tr>
<tr>
<td></td>
<td>• works with each learner to set manageable programs</td>
<td>• negotiate their own programs</td>
</tr>
<tr>
<td></td>
<td>• promotes self assessment strategies and reinforces independent learning</td>
<td>• practice self assessment</td>
</tr>
<tr>
<td></td>
<td>• assists learners to review goals and learning strategies</td>
<td>• practice problem solving</td>
</tr>
<tr>
<td></td>
<td>• collects, amends and develops resources to supplement learners' programs</td>
<td>• build on existing skills and experience</td>
</tr>
<tr>
<td></td>
<td>• organises resources into packages or individual work units</td>
<td>Relevant learning strategies are:</td>
</tr>
<tr>
<td></td>
<td>• copes simultaneously with learners at different levels who are studying different topics and using different media</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• responds to learners' problems and needs by allocating time and support equitably and efficiently</td>
<td></td>
</tr>
</tbody>
</table>
|                              | • supervises and manages the learning process, including learners, their programs and resources. | individual contracts
| Open Learning - learner directed; teacher supported | • supervises and manages the learning process, including learners, their programs and resources. | project work
<p>| Standard learner: teacher ratio 15:1 |                                                                                    | video tapes                                                                         |
|                               |                                                                                    | audio tapes                                                                         |
|                               |                                                                                    | computer based presentations                                                       |
|                               |                                                                                    | reading and research                                                                |
|                               |                                                                                    | case studies                                                                        |</p>
<table>
<thead>
<tr>
<th>TEACHING METHOD</th>
<th>TEACHING ACTIVITIES</th>
<th>LEARNING STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational Experience</td>
<td>The teacher:</td>
<td>Learners benefit from contact with workers in their field and involvement in the workplace.</td>
</tr>
<tr>
<td></td>
<td>• matches the placement with the learner's interests</td>
<td>Being part of the usual work routine provides an opportunity for students to experience and apply their learning to the work situation.</td>
</tr>
<tr>
<td></td>
<td>• negotiates between employers and learners</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• outlines placement and course outcomes to learners and employers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• explains the educational institution's relevant policies to learners and employers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To prepare learners for the work experience, the teacher:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• develops realistic expectations and goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• sets tasks and exercises that anticipate the work situation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• promotes appropriate interpersonal relationships</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• builds confidence and self esteem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• practises problem solving and conflict resolution techniques</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• develops safe and efficient work practices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• encourages personal responsibility and initiative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>During work experience, the teacher:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• visits the learner to observe and evaluate performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• liaises between the learner and workplace supervisor when necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• evaluates the placement</td>
<td></td>
</tr>
<tr>
<td>Standard learner : teacher ratio 15:1 based on coordination required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The teaching methods that you recommend should

- be appropriate for the type and ability level of the learner
- allow learners to be actively involved in their learning
- be suitable for the learning strategies to be used
- be consistent with the learning outcomes and assessment criteria.

Activity

Refer to Worksheet 6.4.

For the curriculum module that you are developing

- identify those teaching methods that would be appropriate

Take each teaching method in turn and ask the four questions. Place your answers, 'YES' or 'NO', in the column under the relevant teaching method.

Then, assess whether or not each method is suitable for teaching the module.

Learning Resources

Learning resources are anything tangible that is used in the teaching or learning process. Learning resources include:

- teaching and learning aids
- accommodation
- plant and equipment
- consumable items
- learner materials

6. Recommending Learning Strategies and Resources 127
Teaching and Learning Aids

Potential teaching and learning aids include

- text books
- reference books
- journal articles
- fact sheets (e.g., 'AgFacts', industry publications, newsletters)
- videos
- films
- slides, filmstrips
- tape-slide presentations
- audio tapes
- models
- computer applications
- overhead projection transparencies (preprepared)
- posters
- charts

The teaching and learning aids should contribute to learning. They are aids to learning. The teaching and learning aids that you recommend should be

- appropriate to the learners' competency levels
- relevant to the material being learned
- accessible to teachers and learners

One of the most frustrating things about a list of teaching and learning aids in a teaching guide is to be given inadequate information to enable the teacher or learner to obtain it. You should provide the following information:

For books:

- author's name
- title of book
- title of series
- edition
- editor
- publisher
- place of publication
• year of publication
• ISBN reference
• chapters or page numbers

For sections of books, journal articles, publications:
• author’s name
• title of article or section
• title of publication
• title of series
• volume number
• issue number
• publication date
• ISBN or ISSN reference
• page numbers

For audio-visual materials:
• name of the video, film, tape, slide set
• producer
• place of production
• year of production
• type of material and duration (video, VHS/UMatic; 15 min)
• distributor

Teaching and learning resources should be cited in the same way that a bibliography is cited in an assignment, report or article.

Use the system described in


**Accommodation and Facilities**

Typical examples of accommodation and facilities are:
• standard classroom
• seminar room
• workshop
• laboratory
• computer room
• library/learning resource centre
You should identify any fittings, fixtures or items of equipment that should be included, or available, in the facility.

**Example:**
Standard classroom equipped with overhead projector, screen, whiteboard, video player and video monitor.

**Equipment**
The major resources in this category are
- plant and equipment
- consumable items
- learner materials

As a guide, *plant and equipment* consists of items costing more than $5000, or having a life expectancy greater than five years.

Give an indication whether the equipment should be owned by each provider, or could be accessed from industry or specialised centres when needed.

Estimate the *consumable items* needed on the basis of a group of 15 learners. This provides some consistency in estimating costs of providing the module.

Identify materials that learners will need to provide for themselves to achieve the learning outcomes. The list may include
- calculator
- fact sheets
- protective clothing
- personal computer
- books
- cost of field trips

**Staff**
State the academic qualifications, expertise, skills and/or work experience needed by a person to be competent to teach this module.
Examples:

- Degree in science or applied science with major study in microbiology, or equivalent qualification, plus at least three years post-qualification experience in diagnostic microbiology.

- Diploma in Agriculture and Graduate Certificate in Rural Business Management, or equivalent qualifications, plus three years experience in managing an agricultural enterprise.

- Boat and Shipbuilding Trade Certificate, plus five years relevant industry experience.

- Completion of this module, or equivalent, plus three years industrial experience in the areas covered by the learning outcomes of this module.

The guiding principles should be that

- the teacher has sufficient experience and expertise in the content of the module to be considered 'competent'

- a teacher with these qualifications, expertise, skills and/or work experience should be able to teach students at the level specified in the module

- the teacher specification is not so narrow that it excludes teachers who can demonstrate that they are 'competent' to teach the module.

There may be a need for non-teaching support staff to prepare teaching materials or service classes. Include details of any essential requirements for support staff.

Time

Refer to the nominal time allocation for this module. Is it appropriate for the

- level of the competency standards addressed by the curriculum?

- complexity of the learning outcomes?

- assessment methods and assessment strategies?
• learning strategies and teaching methods?

• resources available?

Relate the teaching staff requirements to the teaching methods used to deliver the module. For each learning outcome, estimate the amount of time needed for each teaching method used. Add the time needed for each teaching method for the module as a whole.

Activity

Refer to Worksheet 6.5.

For the curriculum module that you are developing

• estimate the teaching hours required for the teaching method(s) recommended for each learning outcome.

The total will indicate the time needed to deliver the module and the learner:teacher ratios required.

This resource will be used to calculate the total teaching hours needed for the module.

Key Points

After recommending learning strategies, teaching methods and learning resources, the curriculum module writer should be able to answer these questions:

• How well has the content been presented so that the purpose of the module can be achieved?

• Have the most appropriate learning strategies been suggested for the 'knowledge', 'skills' and 'attitudes' components of the module?
- How appropriate for the learners are the recommended teaching methods?

- Do the learning strategies and teaching methods allow learners to be actively involved in their learning?

- How consistent are the methods with the learning outcomes and assessment criteria?

- What are the implications of recommending these teaching methods and learning strategies?

- Are the proposed accommodation and facilities suitable and available?

- Is the specified equipment essential or desirable?

- Is the equipment available?

- If the equipment is not available, what will it cost?

- How much will it cost to run this module?

- Are the recommended teaching and learning aids available?

- Are they accessible to learners?

- Is there sufficient and correct information about each resource that it can be identified readily?

- Are staff available to teach the module?

- Do they have appropriate levels of competency?

- Have I given a teacher or learner as much essential and desirable information as I can?

---

*For the curriculum module that you are developing, recommend suitable learning strategies, teaching methods, and itemise the essential resources needed to deliver the module.*
Summarising Module Development

Learning Outcome
By completing this unit, you will be able to summarise the curriculum development process presented in this program.

Assessment Criteria
To show that you have achieved this learning outcome, you must be able to:

1. Identify the major stages in developing a competency based curriculum module.

2. Outline the responsibilities of industry and curriculum developers in these major stages of curriculum development.

3. Explain the relationship between competency standards and competency based vocational education and training programs.

About this unit
This unit summarises the major components of competency based education and training programs and their relationship to industry competency standards.
Australia is implementing an effective, efficient, responsive and coherent national vocational education and training system as part of the National Training Reform Agenda. The reform agenda developed in response to

- the need to upgrade the skill level of the workforce so that Australian industry will be more competitive
- the influence of award restructuring and the trend to enterprise agreements; and
- workplace reform with new methods of organising and conducting work.

The framework for vocational education and training involves

- the development and maintenance of national competency standards to underpin the system
- conversion of vocational education and training to a competency basis
- steps towards a coherent structure of vocational education and training credentials
- the establishment of the National Framework for the Recognition of Training
- better interfaces between the education sectors, closer relationships with industry, and new partnerships arrangements
- steps towards a unified entry-level training system with the proposed establishment of an Australian Vocational Certificate Training System, which will be based on national competency standards and the Australian Standards Framework of the National Training Board.

These developments are leading to a more coherent system of vocational education and training, characterised by quality outcomes, widened access, and responsiveness to changing conditions and industry needs.
Skills Analysis

The concept of competency focuses on what a person is expected to do in the workplace. Competency covers all aspects of work performance, not only narrow task skills, and includes:

- **Task Skills** - ability to perform individual tasks
- **Task Management Skills** - ability to manage a number of different tasks within a job
- **Transfer Skills** - ability to apply skills to new situations and environments
- **Contingency Management Skills** - ability to respond to problems, irregularities and changes in the routine work situation
- **Work Environment Skills** - ability to deal with responsibilities and expectation of the work environment.

A competency based system integrates knowledge and understanding, skills and attitudes and values. A person performing a task usually draws upon underpinning knowledge and understanding, especially where the work requires understanding of the whole process, an integrated approach to quality, or the use of judgement and initiative.

The components of competency - task skills, task management skills, transfer skills, contingency management skills and work environment skills - need to be incorporated into competency standards. While a particular unit of competency may not address all components of competency, overall a group of units in a standard should because these components provide a framework to encompass developments arising from workplace reform and emerging skill needs of an industry.

Behaviour, attitudes and values influence achievement and application of competency. They are most likely to influence work performance, teamwork and the collective culture of the enterprise and are particularly relevant to problem solving safe working and the ability to transfer skills to new situations.
Competency Standards

*Competency Standards* define the competencies required for effective performance in the workplace. A *competency standard* specifies the knowledge, skills and behaviours to be applied to the standard of performance required in the workplace.

A *Unit of Competence* refers to a broadly defined component of a job; that is, a job role. It is much broader than a particular procedure, method, function or task.

**Examples:**
- Determine training requirements
- Deal with customer enquiries

*Elements of Competence* are the basic building blocks of a unit of competence. They describe things that a person who works in a particular job must do.

An *element of competence* is the lowest, logical, identifiable and discrete grouping of actions and knowledge that constitutes one of the functions of the job role.

**Examples:**
- Identify competencies for specific jobs and roles
- Identify skills of individuals in specific jobs and roles
- Determine if training needs exist
- Define training requirements
- Provide relevant information

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Performance Criteria are evaluative statements that specify the required level of performance of the competency. They state the required outcomes by which the elements of competence, and the unit as a whole, can be assessed as being performed to the level acceptable in employment.

Examples:

- Results of assessment are interpreted and passed on to learners
- Information is obtained from customer and documented if required
- Mechanical faults are recognised and corrected
- Paint is applied to the surface in even coats

The Range of Variables statement relates to the unit of competence as a whole. It defines the situations within which a unit of competence applies and provides a link between application of the standard in various sectors of the industry. It provides a focus, along with performance criteria, for assessment of learners and development of training programs, and assists in up-dating competency standards as a result of changes in the workplace.

Examples:

- Under routine medical, paramedical or emergency conditions
- According to statutory requirements
- Commercial and non-commercial vehicles are used to transport products
- Customers may include individual or corporate customers
- Both mechanical and electrical power tools are used.
An Evidence Guide assists in interpretation and assessment of the competency standards. It indicates the context within which a person should be assessed as being competent, but it does not specify detailed methods of assessment. The evidence guide covers critical aspects of a unit and its relationship to other units, especially units needing to be assessed together, and the required evidence of competency, including the extent of sampling of evidence which could be undertaken.

Examples:

- Competency is demonstrated by performance using all classes of tools in the range of variables.

- Evidence of knowledge of current services provided to customers is required.

In award restructuring, the skills needed to carry out a job are related to the work structure, through specification of competency standards.

Skills > Competency > ASF > Work
needed Standards level structure

Competency standards are aligned to the Australian Standards Framework. By identifying the skills needed to perform a job, competency standards can be developed. Various units of competence and their elements of competence, performance criteria, range of variables and evidence guide, when appropriate, can be grouped together at an ASF level.

These components of competency based training are the responsibility of "industry", which may be a specific industry, a number of related enterprises across several industry areas, or an individual enterprise.
Curriculum Development

Competency based education and training programs are vocational education programs based on industry recognised competency standards. Competency standards are the benchmarks for vocational education and training, which is responsive to the changing training and education needs of industry.

Course Design

Curriculum development is based on the need for education and training programs to help learners achieve competency standards, and move between levels of standards. Vocational education and training courses, or programs, are designed to do this.

Curriculum Modules

Vocational education and training courses are made up of one or more modules. Curriculum modules are packages of learning to satisfy a specified educational purpose.

The Purpose Statement of a module explains

- who should complete the module
- why they should complete the module
- what they will be able to do by completing the module.

A module specifies one or more learning outcomes and the assessment criteria that describe the knowledge, skills and attitudes through which learners show that they have achieved each learning outcome.

To emphasise the relationship between the curriculum module and the competency standards being addressed by the module, the module states conditions under which learning and learner assessment should take place, and it outlines assessment methods for each learning outcome.

A module can be assessed, and it may either stand on its own or be linked to other modules in the same or related study areas. Similarly, each learning outcome within a module can be assessed, or an assessment
strategy can be devised which integrates learning and assesses learner achievement of the module in a holistic way.

The content of a module suggests what a learner should learn to achieve the learning outcomes and purpose of the module. The content material should cover the knowledge, skills and attitudes needed to satisfy the assessment criteria, and should address the five groups of skills that are components of competency.

Learning strategies and teaching methods should relate to how people learn, to the content to be learned, and to the outcome to be achieved. Although competency based education is directed to achieving outcomes rather than inputs, some learning strategies are more effective than others.

Competency based education and training is about developing competency, regardless of how that competency was achieved. Traditional learning methods are only one way of achieving competency. Competency based vocational education programs recognise that people can, and often need to, learn in a range of situations - on job, off job or a combination of both; face to face, self-paced learning, distance learning, or a combination of modes. The curriculum developer should develop curriculum modules that can use several delivery methods. Self-paced learning is only one delivery option; modules need not be self-paced to be competency based.

Resources - teaching and learning aids, accommodation, plant and equipment, consumable items, learner materials, assessment resources, staff - are an important consideration in curriculum development. Competency based education and training programs must be cost effective.

Curriculum Delivery and Implementation

Other features of the National Training Reform Agenda are

- accreditation of courses and training programs,
usually by State or Territory authorities, to ensure that they are educationally sound and related to competency standards.

- course delivery by public and private sector providers, registered to provide each course by State or Territory authorities.

- assessment of individuals against prescribed standards of performance, involving both assessment mechanisms and recognition of prior learning.

- certification that a person has achieved a level of competency.

The benefits of this system are:

- competent employees satisfying industry needs
- portability of credentials and career progression

Built into this system are:

- monitoring and verification processes involving internal, local and external validation to ensure that vocational education and training produces competent workers.

- review of competency standards and vocational education programs to ensure that they remain relevant to the actual needs of industry.

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Conclusion

This program has been structured with a purpose, a series of learning outcomes, and associated assessment criteria.

Having completed it, you should be able to produce a syllabus and a teaching guide for a competency based module in a vocational education course.
You should be able to:

- produce a plan for writing a syllabus and teaching guide
- identify industry competency standards that the curriculum module will address
- develop a syllabus for a competency based module
- recommend suitable methods and strategies for assessing learner achievement
- suggest module content that is appropriate to the learning outcomes of the curriculum module
- recommend appropriate learning strategies, teaching methods and resources to achieve the learning outcomes of the curriculum module.

If you need clarification of any of the steps involved in developing a competency based curriculum module, you should consult appropriate resources, such as those listed in the bibliography.

In TAFE NSW you could also seek assistance from Curriculum Managers and Curriculum Development Coordinators in Industry Training Divisions. In other organisations, you should contact your curriculum unit.
Appendices

Appendix 1: Bibliography
             Acronyms

Appendix 2: Program Worksheets

Appendix 3: Module Proforma
BIBLIOGRAPHY


Candy, P. Selecting Appropriate Teaching Methods for Individual Learners within Groups. Institute of Technical and Adult Teacher Education, Sydney College of Advanced Education, Sydney, (undated)


## ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ACTRAC</td>
<td>Australian Committee for Training Curriculum</td>
</tr>
<tr>
<td>ASCO</td>
<td>Australian Standard Classification of Occupations</td>
</tr>
<tr>
<td>ASF</td>
<td>Australian Standards Framework</td>
</tr>
<tr>
<td>ASIC</td>
<td>Australian Standard Industrial Classification</td>
</tr>
<tr>
<td>CBET</td>
<td>Competency Based Education and Training</td>
</tr>
<tr>
<td>CSB</td>
<td>Competency Standards Body</td>
</tr>
<tr>
<td>DACUM</td>
<td>'Developing a Curriculum'</td>
</tr>
<tr>
<td>DEET</td>
<td>Department of Employment, Education and Training</td>
</tr>
<tr>
<td>DIRETFE</td>
<td>Department of Industrial Relations, Employment, Training and Further Education</td>
</tr>
<tr>
<td>ITAB</td>
<td>Industry Training Advisory Board</td>
</tr>
<tr>
<td>ITC</td>
<td>Industry Training Council, or Committee</td>
</tr>
<tr>
<td>MOVEET</td>
<td>Ministers for Vocational Education, Employment and Training</td>
</tr>
<tr>
<td>NFROT</td>
<td>National Framework for the Recognition of Training</td>
</tr>
<tr>
<td>NTB</td>
<td>National Training Board</td>
</tr>
<tr>
<td>RATE</td>
<td>Register of Australian Tertiary Education</td>
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<td>ROT</td>
<td>Recognition of Training</td>
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<tr>
<td>RCC</td>
<td>Recognition of Current Competence</td>
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<td>RPL</td>
<td>Recognition of Prior Learning</td>
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<td>TAFE</td>
<td>Technical and Further Education</td>
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<td>Vocational Education, Employment and Training Accreditation Board</td>
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<td>Vocational Education and Training</td>
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</table>
PROGRAM OUTCOMES

PURPOSE OF THIS PROGRAM

This workshop provides training for TAFE teachers and consultants in writing syllabuses and teaching guides for vocational education programs.

Participants who complete this workshop should be able to prepare a syllabus and teaching guide for a competency based module in a vocational education course.

LEARNING OUTCOMES AND ASSESSMENT CRITERIA

1. Produce a plan for writing a syllabus and teaching guide.
   1.1 Define the terms ‘curriculum’, ‘syllabus’, and ‘teaching guide’.
   1.2 State the purpose of a syllabus and a teaching guide.
   1.3 Explain the place of the syllabus and teaching guide in the curriculum development process.
   1.4 Describe the content of a useful teaching guide.
   1.5 Relate the teaching guide to the teaching process.

2. Identify industry competency standards that the curriculum will address.
   2.1 Explain what is meant by competency, key competency, vocational competency, competency standard, and competency based training.
   2.2 Outline five major components of competency.
   2.3 Describe a process for identifying competency standards, or job skills.
   2.4 Identify the key competencies needed for training and further education.
   2.5 Relate the Australian Standards Framework to competency standards and course curriculum.
Worksheet 11.1(2) Developing Competency Based Curriculum Modules

3. Develop a syllabus for a competency based curriculum module.
   3.1 Differentiate between competency based vocational programs and traditional educational programs.
   3.2 Provide the key information that should be included in a competency based syllabus.
   3.3 Identify the purpose of a competency based module and relate it to competency standards.
   3.4 Determine and justify a nominal time allocation for completion of a module.
   3.5 Develop learning outcomes that are related to competency standards.
   3.6 Specify assessment criteria for each learning outcome.
   3.7 Describe appropriate conditions in which learning and assessment should take place.

4. Recommend suitable methods and strategies for assessing student achievement.
   4.1 Explain the use of criterion referenced assessment in competency based education and training programs.
   4.2 Discuss the principles of validity, reliability, fairness and practicality in selecting appropriate assessment methods for competency based education programs.
   4.3 Identify the advantages and disadvantages of a range of methods of learner assessment.
   4.4 Select valid, reliable, fair and practicable assessment methods that are appropriate to specified learning outcomes.
   4.5 Develop a holistic assessment strategy for a curriculum module.
   4.6 Outline key issues relating to graded assessment in competency based education and develop a graded assessment specification.
5. Suggest module content that is appropriate to the learning outcomes of the curriculum module.

5.1 Select content material that covers the knowledge, skills and attitudes needed to satisfy the assessment criteria.

5.2 Include content material that will help learners to develop task skills, task management skills, transfer skills, contingency management skills and work environment skills.

5.3 Express module content as learning objectives that are derived from learning outcomes and assessment criteria.

5.4 Sequence module content in ways that will assist learning.

6. Recommend appropriate learning strategies, teaching methods and resources to achieve the learning outcomes of the curriculum module.

6.1 Link the selection of appropriate learning strategies to how people learn.

6.2 Identify a range of learning strategies.

6.3 Choose learning strategies that are consistent with accepted principles of learning and contribute to achievement of the learning outcome.

6.4 Propose appropriate teaching methods for the module.

6.5 Specify a range of resources that will assist teaching and learning of the module.

7. Summarise the curriculum development process presented in this program.

7.1 Identify the major stages in developing a competency based curriculum module.

7.2 Outline the responsibilities of industry and curriculum developers in these major stages of curriculum development.

7.3 Explain the relationship between competency standards and competency based vocational education and training programs.
PLANNING THE DEVELOPMENT PROCESS

Think back to the time when you were about to teach your first class.

What information did you have, or would you have liked to have been given, about the subject that would have helped you to plan, prepare and present your lessons?

Also, think back to the time when you were a student.

What information did you have, or would you have liked to have been given, about the subject that would have helped you to learn?
Form pairs/threes. Discuss the points that each of you selected and identify the four most important points.

If any of these four points are not on your own list, write them in.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Form fours/sixes. Share your views and collectively list the four points that your group thinks are the most important information that will help a teacher to plan, prepare and present effective lessons.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
IDENTIFYING THE PURPOSE OF A MODULE

For the module that you are writing:

1. Identify the Australian Standards Framework competency level to which the module is directed.

   ASF Level

2. State the purpose of the module.

3. Explain how the module relates to the appropriate competency standard.

4. Suggest a nominal time allocation for completion of the module.

   Nominal time allocation hours
SPECIFYING LEARNING OUTCOMES

For the module that you are writing:

1. Develop one learning outcome.
   Learners will be able to ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

2. Develop assessment criteria for this learning outcome.
   To show that they have achieved this learning outcome, learners must be able to:
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

3. State the conditions that apply to learning and assessment.
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
4. Develop another learning outcome.
   Learners will be able to ____________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________

5. Develop assessment criteria for this learning outcome.
   To show that they have achieved this learning outcome, learners must be able to:
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________
   _____________________________________________

6. State the conditions that apply to learning and assessment.
   _____________________________________________
   _____________________________________________
   _____________________________________________
CHECKING LEARNING OUTCOMES
AND ASSESSMENT CRITERIA

Read these ten ‘Learning Outcomes’ or ‘Assessment Criteria’ and decide whether or not each is correctly written. If it is, place a tick ( ) to the left of the statement number. If a statement is incorrectly written, place a cross (X) to the left of the statement number and rewrite the statement as a correct Learning Outcome or Assessment Criterion.

Note: The task is to assess each statement, not to perform the task suggested by the statement.

1. List five action words that could be used to write valid assessment criteria.

2. Apply a process to develop learning outcomes and assessment criteria for a module.

3. Know how to write purpose statements for modules in a competency based course.

4. Explain what is meant by "SMART assessment criteria".
Worksheet 3.3(2)  Developing Competency Based Curriculum Modules

5. Prepare lesson plans from clearly stated learning outcomes and assessment criteria.

6. Understand the reasons for writing learning outcomes and assessment criteria.

7. Be familiar with the differences between course aims, learning outcomes and assessment criteria.

8. Demonstrate an appreciation of the role of assessment criteria in setting learner tests.

9. Assess learning outcomes to ensure that they provide sufficient scope for a range of learning strategies to be used to develop competence.

10. Discriminate between valid learning objectives that are specific and observable, and statements that are vague and not assessable.
ASSESSMENT METHODS

The key features of each type of assessment method are listed in the left hand column of the worksheet. Alongside each group of assessment methods, list some advantages and disadvantages of using those methods to assess students.

<table>
<thead>
<tr>
<th>WRITTEN OBJECTIVE TESTS-Selection Type</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>True/False Statements</strong></td>
<td></td>
</tr>
<tr>
<td>• Students choose between two alternatives, only one of which is correct.</td>
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</tr>
<tr>
<td>• The alternatives can be yes/no, correct/incorrect, right/wrong, as well as true/false.</td>
<td></td>
</tr>
<tr>
<td>eg An electrical fire should be extinguished with a carbon dioxide fire extinguisher.</td>
<td>T  F</td>
</tr>
<tr>
<td><strong>Multiple Choice</strong></td>
<td></td>
</tr>
<tr>
<td>• Consist of a question or statement and a set of alternative answers, usually four, of which only one is correct.</td>
<td></td>
</tr>
<tr>
<td>eg The correct knot for tying the two ends of an arm sling is the</td>
<td></td>
</tr>
<tr>
<td>A clove hitch</td>
<td></td>
</tr>
<tr>
<td>B reef knot</td>
<td></td>
</tr>
<tr>
<td>C sheepshank</td>
<td></td>
</tr>
<tr>
<td>D sheetbend</td>
<td></td>
</tr>
<tr>
<td><strong>Matching</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>• Students match information from one list with information in another list.</td>
<td></td>
</tr>
<tr>
<td>eg Match the landmarks with the cities in which they are located by writing the number of the city alongside the name of the landmark.</td>
<td></td>
</tr>
<tr>
<td>Landmarks</td>
<td>Cities</td>
</tr>
<tr>
<td>Eiffel Tower</td>
<td>1. London</td>
</tr>
<tr>
<td>Buckingham Palace</td>
<td>2. New York</td>
</tr>
<tr>
<td>Lake Burley Griffin</td>
<td>3. Paris</td>
</tr>
<tr>
<td>Statue of Liberty</td>
<td>4. Toronto</td>
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<tr>
<td></td>
<td>5. Canberra</td>
</tr>
</tbody>
</table>
**Worksheet 4.1(2)**

<table>
<thead>
<tr>
<th>WRITTEN OBJECTIVE TESTS - Supply type Calculation</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students are asked to calculate the numerical answer to a question.</td>
<td></td>
</tr>
<tr>
<td>eg The concentration of a pesticide is 5 grams per litre. How much of this concentrated pesticide will you mix with water to make 10 litres of spray solution containing 5 milligrams per litre?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Completion</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A sentence is completed by adding the correct word or words.</td>
<td></td>
</tr>
<tr>
<td>eg The telephone was invented by</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Short Answer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students write a number, one or two words, or a sentence in response to a question.</td>
<td></td>
</tr>
<tr>
<td>eg Name three basic operations performed on a lathe.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRACTICAL TESTS</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulated Work Exercises</td>
<td></td>
</tr>
<tr>
<td>• Students complete an exercise that closely resembles a workplace function.</td>
<td></td>
</tr>
<tr>
<td>eg Select appropriate ingredients from the range available and make a loaf of bread.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structured Practical Exercises</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students carry out practical tasks based on workshop, laboratory, classroom or field activities.</td>
<td></td>
</tr>
<tr>
<td>- exercises tend to be parts of workplace tasks.</td>
<td></td>
</tr>
<tr>
<td>eg Join two pieces of timber with a dovetail joint.</td>
<td></td>
</tr>
</tbody>
</table>

| • Students may proceed through several 'stations' and undertake a variety of practical tasks. |            |
| eg A series of case studies. |            |

<table>
<thead>
<tr>
<th>Fault Finding Exercises</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students are presented with a piece of equipment, a series of test results, a set of accounts, or something similar, and asked to identify an error or problem.</td>
<td></td>
</tr>
<tr>
<td>eg Given an electrical circuit that is not working, identify the fault and correct it.</td>
<td></td>
</tr>
</tbody>
</table>
## Worksheet 4.1(3)

### ON THE JOB ASSESSMENT

**Direct Observation on the Job**
- Direct observation of the student performing a practical task, technical skill, or interpersonal skill, in a real or simulated setting.

  **eg** A nursing student taking a 'patient's' blood pressure.

### ASSIGNMENT

**Written Assignments**
- Usually involve an essay, report or answers to a series of questions.
- Completed under 'non-test' conditions.

**Projects, Surveys, Poster Presentations**
- An assignment involving some form of research or investigation by the student

**Individual Contracts**
- A project in which the student negotiates and agrees with the teacher, what will be done, by when, what will be produced, and how it will be assessed.

### PERSONAL APPRAISAL

**Peer Assessment**
- Involves establishing criteria and standards to be applied and having fellow students, or 'peers' make judgements about how well a student has met them.

**Self Appraisal**
- Involves students in establishing the criteria and standards they will apply to their work and then in making judgements about how well they have been met.
**ESSAYS**

**Restricted Response Essays**
- Present a well defined task and set explicit boundaries on the answer required and on its organisation.

*eg* Explain the advantages and disadvantages of essay tests and objective tests in vocational education, with reference to validity, reliability, fairness and practicality.

**Extended Response Essays**
- Emphasises freedom of expression and creativity, ability to provide and organise ideas, and depth and scope of knowledge.

*eg* Compare and contrast essay tests with objective tests in vocational education.

---

**ORAL AND AURAL ASSESSMENTS**

**Oral Presentations**
- Students give an oral exposition, or lecture, on a topic.

**Seminars**
- Students give an oral presentation on a topic and then lead a group discussion on this topic.

**Oral and Aural Tests**
- Oral - students make a spoken response to an assessment item.
- Aural - students listen to some material and are assessed on their ability to comprehend what they hear.
- *Viva voce* - questions are posed and answered verbally.

**Interviews**
- Verbal communication between teacher and student.

---
The worksheet gives some examples of Learning Outcomes and their Assessment Criteria. For each example, suggest one or more assessment methods that could be used to assess students' achievement of the learning outcomes. Check the appropriateness of your selected methods against the assessment principles of validity, reliability, fairness and practicality.

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>ASSESSMENT METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Small Business Enterprise</td>
<td></td>
</tr>
<tr>
<td><strong>Learning Outcome</strong></td>
<td></td>
</tr>
<tr>
<td>• Monitor and evaluate the cash flow performance of the business</td>
<td></td>
</tr>
<tr>
<td><strong>Assessment Criteria</strong></td>
<td></td>
</tr>
<tr>
<td>1. Record income and expenditure entries on a cash sheet.</td>
<td></td>
</tr>
<tr>
<td>2. Reconcile income and expenditure records with cash statements.</td>
<td></td>
</tr>
<tr>
<td>3. Compare actual income and expenditure with budgeted income and expenditure.</td>
<td></td>
</tr>
<tr>
<td>4. Analyse differences between actual and projected cash flow.</td>
<td></td>
</tr>
<tr>
<td>2. Planning and Completing Taxi Journeys</td>
<td></td>
</tr>
<tr>
<td><strong>Learning Outcome</strong></td>
<td></td>
</tr>
<tr>
<td>• Locate a passenger's destination and choose the most appropriate route to reach it.</td>
<td></td>
</tr>
<tr>
<td><strong>Assessment Criteria</strong></td>
<td></td>
</tr>
<tr>
<td>1. List major tourist attractions, shopping centres, industrial and business sites within the region serviced.</td>
<td></td>
</tr>
<tr>
<td>2. Describe the location of these features in relation to the geography of the region.</td>
<td></td>
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<tr>
<td>3. Name the major traffic routes passing through the region and the places that they service.</td>
<td></td>
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<tr>
<td>4. Use a street directory to find given streets and places.</td>
<td></td>
</tr>
<tr>
<td>5. Choose a route from a point of hire to a passenger's destination and justify this choice in terms of distance, traffic conditions, and travel time.</td>
<td></td>
</tr>
</tbody>
</table>
3. Producing Nursery Plants

Learning Outcome
• Use common herbicides in ways that do not endanger themselves or others.

Assessment Criteria
1. Choose and wear appropriate protective clothing when using herbicides.
2. Handle common herbicides safely, in both concentrated and dilute forms.
3. Calculate quantities of concentrated herbicides needed to make diluted solutions for specific applications.
4. Prepare working solutions of herbicides from concentrated liquid, granular and pelleted forms of concentrated herbicides.
5. Operate applicators in a safe, effective and efficient way.
6. Clean spray applicators ready for storage.


Learning Outcome
• React quickly and deal appropriately with electrical workshop fires.

Assessment Criteria
1. Select appropriate fire extinguishers for various classes of fires that may occur in an electrical workshop.
2. Use pressurised water, soda acid, foam, carbon dioxide and dry chemical fire extinguishers to put out a workplace fire.
5. Audio Visual Aids

Learning Outcome
- Set up and operate an overhead projector for a seminar or training session.

Assessment Criteria
1. Choose a suitable room layout for the operator, overhead projector and screen.
2. Set up the overhead projector and projection screen so that the screen is aligned with the projector and corrected for keystone effect.
3. Identify and operate the power switches on the overhead projector.
4. Project overhead transparencies onto the screen.
5. Carry out minor maintenance on the projector, including replacing the projector lamp and cleaning the lenses, platen and fresnel.
**RECOMMENDING ASSESSMENT METHODS**

For each learning outcome in the curriculum module that you are developing, choose appropriate assessment methods by which to assess student achievement of that learning outcome.

Check the appropriateness of your selected methods against the assessment principles of validity, reliability, fairness and practicality.

<table>
<thead>
<tr>
<th>ASSESSMENT METHOD</th>
<th>Learning Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1    2    3    4</td>
</tr>
<tr>
<td>Written Objective Test</td>
<td></td>
</tr>
<tr>
<td>Practical Test</td>
<td></td>
</tr>
<tr>
<td>On the Job Assessment</td>
<td></td>
</tr>
<tr>
<td>Assignment</td>
<td></td>
</tr>
<tr>
<td>Personal Appraisal</td>
<td></td>
</tr>
<tr>
<td>Essay</td>
<td></td>
</tr>
<tr>
<td>Oral/Aural Test</td>
<td></td>
</tr>
</tbody>
</table>
Worksheet 4.3(2)  Developing Competency Based Curriculum Modules

ASSESSMENT STRATEGY

Look at each assessment method in turn and list the learning outcomes that can be assessed by that method. Is it possible to assess achievement of these learning outcomes in the same assessment event? At what stage of the module would learners be able to complete each assessment event? What weighting would you assign to each assessment event?

<table>
<thead>
<tr>
<th>Assessment Events</th>
<th>Learning Outcomes</th>
<th>Timing</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Objective Tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical Tests</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>On the Job Assessments</td>
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<td></td>
<td></td>
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<tr>
<td>Assignments</td>
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<td></td>
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<tr>
<td>Personal Appraisal</td>
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<td></td>
<td></td>
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<tr>
<td>Essays</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aural/Aural Tests</td>
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</tbody>
</table>

What is the minimum result that the learner must achieve to be considered 'satisfactory'?
Developing Competency Based Curriculum Modules

Worksheet 4.4

ASSESSMENT CASE STUDIES

Read through each case study and highlight the key issues and any attributes or deficiencies of the assessment strategies. Suggest ways of setting up graded assessment strategies.

Case Study 1

The course consists of five modules and each module comprises six learning outcomes.

Learners undertake a written test of objective and short answer questions for each learning outcome. To be assessed as 'satisfactory', learners must achieve 80% in each test so there is no final test.

Learners who gain more than 90% on the first attempt receive a 'Distinction'; those who gain 80-90% on the first attempt receive a 'Credit'. Those who do not achieve 80% are given feedback, directed to further study, and given a similar test until they achieve at least 80% but only receive a 'Pass' grade.

Assignments are intended to assess the material covered in a module and allow learners to relate this material to their own work situation. Assignments are graded as 'Satisfactory' only, but learners would prefer a grading system such as 'Pass', 'Credit' and 'Distinction' as they feel that the present system is deficient in not catering for learner excellence.

Case Study 2

The course consists of 15 modules in three levels with some modules being prerequisites for other modules.

Assessment consists of:

- self-assessment tests, which do not contribute to the final mark.
- three sub-tests in each module, covering all the preceding work in the module.
- a final test in each module.
- an assignment, which requires integration of practical and theoretical aspects of the module.
- practical on the job assessment of a list of skills, undertaken throughout the modules.
Developing Competency Based Curriculum Modules

The tests are graded on a pass, credit and distinction format. The practical on the job assessment is assessed as 'satisfactory' or 'not yet satisfactory'. Some checklists have been developed to help teachers mark assignments. Where these have not been developed, the professional competence of the teacher is used. Assignments are marked as 'satisfactory' or 'unsatisfactory', based on the learning outcomes and assessment criteria for the module.

Learners believe that they are over-assessed.

Case Study 3

The program offers 60 modules leading to awards at Advanced Certificate, Associate Diploma and Diploma levels.

A variety of assessment methods is used, including:

- Assignments, for each topic within a module. Assignments are multiple choice and short answer questions which are corrected by a teacher, but do not count towards the final competency grading.

- A project for each module which consists of a series of short answer questions and a task.

- A 'final examination' for each module, conducted under examination conditions.

The project and the final examination each count as half of the final assessment. To complete the module satisfactorily, learners must achieve a score of 85% in the project and the module test.

These standards are believed necessary to produce a high quality workforce. While learners agree with the need to produce a high quality workforce, they believe the 'pass' mark is very high and they are spending time on assessment activities at the expense of learning experiences.

Case Study 4

The course consists of modules that are competency based and fully self paced. Students who do not complete the course in the nominal duration must pay an hourly fee for the additional time spent at the College to complete the course. Teaching and assessment occurs on a one-to-one basis.

At the end of each unit (part of a module) learners must complete a computer readiness test to a satisfactory level before they can be assessed by a teacher.
Almost all assessment is teacher-centred and involves no written work for the learner. Usually, the teacher watches a learner conduct a practical exercise and orally questions the student throughout the exercise. Although there are no written guidelines on testing, teachers refer to the learner's computer readiness test as a guide to the depth of questioning they should use. Learners who score high on the computer pre-test will be questioned less than those who score lower. No question banks are used and teachers are not given sample questions or guidelines on the number of questions that should be asked.

At the end of each off-the-job period (block, term, semester), a list of the learning outcomes achieved by learners is sent to their employers so that the employer can check if learners are able to perform tasks on-the-job.
SUGGESTING MODULE CONTENT

Working through this exercise will help you suggest appropriate content for a learning outcome, and write the content as statements that describe what learners should be able to do so that they will satisfy the assessment criteria.

1. Write down the assessment criteria for which you are going to suggest suitable content

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. Take each assessment criterion in turn and list:

<table>
<thead>
<tr>
<th>Assessment Criterion</th>
<th>What learners need to know, understand, apply, etc</th>
<th>What learners need to do</th>
<th>How learners need to behave or feel</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
### Developing Competency Based Curriculum Modules

**Worksheet 5.1(2)**

2. **cont’d**

<table>
<thead>
<tr>
<th>Assessment Criterion</th>
<th>What learners need to know, understand apply, etc</th>
<th>What learners need to do</th>
<th>How learners need to behave or feel</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

3. Check that the list includes:

- Task skills
- Task management skills
- Transfer skills
- Contingency management skills
- Work environment skills
4 Write statements that describe what learners should be able to do so that they will satisfy the assessment criteria.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Focus of the activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td></td>
</tr>
</tbody>
</table>
5. Tick the appropriate boxes:

Are these learning objectives

- lower level 'knowledge' objectives?
- higher level 'knowledge' objectives?
- lower level 'skills' objectives?
- higher level 'skills' objectives?
- 'behaviour' or 'feelings' objectives?

6. Are these levels appropriate to the assessment criteria?

7. Is each learning objective S pecific?
   - M easurable?
   - A chievable?
   - R elevant?
   - T rackable?

8. Number the learning objectives in the sequence that they should be completed.
LEARNING STYLE PREFERENCES

How do you learn best?

Think about yourself and how you like to learn. Do you prefer

- reading a book in a quiet room?
- talking through ideas with other people?
- listening to someone knowledgeable?
- watching a demonstration or film?

What sort of learning climate do you like best? Do you prefer:

- the 'cut & thrust' of debate or argument?
- to listen to reasonable statements?
- to hide away and learn by yourself?

1. Complete this statement:

   'I learn BEST by ...'

2. To which group, or groups, of learners do you see yourself as belonging?

3. When you are learning something, which learning strategies do you prefer?
SELECTING LEARNING STRATEGIES

On the following table, various learning strategies are listed down the left hand side of the worksheet and the first four stages of the ‘learning model’ are listed across the worksheet.

Think about each learning strategy. Place a tick in the appropriate column alongside each strategy if it can be used for learners to
- be introduced to a topic
- get to know a topic
- try out what they have learned about a topic.

If learners can ‘get feedback’ by using this learning strategy, list ways that this could be done (for example, from the teacher, other learners, checklists, resource material).

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Be Introduced</th>
<th>Get to Know</th>
<th>Try Out</th>
<th>Get Feedback from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend lecture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watch video/film</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Read book, notes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Attend seminar</td>
<td></td>
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<tr>
<td>Ask questions</td>
<td></td>
<td></td>
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<tr>
<td>Watch demonstration</td>
<td></td>
<td></td>
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<tr>
<td>Industry visit</td>
<td></td>
<td></td>
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<tr>
<td>Practical exercises</td>
<td></td>
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<tr>
<td>Field work</td>
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<tr>
<td>Answer questions</td>
<td></td>
<td></td>
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<tr>
<td>Case study</td>
<td></td>
<td></td>
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<tr>
<td>Problem centred group</td>
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<tr>
<td>Simulation</td>
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<tr>
<td>Role play</td>
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<tr>
<td>Individual Contract</td>
<td></td>
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</tr>
</tbody>
</table>
What do you think are some implications of these findings?
**TEACHING METHODS**

Teaching methods commonly used in vocational education programs are described in the left hand column.

In the spaces provided, write down:
- what you think the teacher could do when using this teaching method
- which learning strategies are suitable for use in this method of teaching.

<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Teaching Activities</th>
<th>Learning Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified Lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A lesson delivered mostly as a lecture.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated Theory/Practical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers and learners work together to experience and explore theory and practice.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Method</td>
<td>Teaching Activities</td>
<td>Learning Strategies</td>
</tr>
<tr>
<td>---------------------------</td>
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</tr>
<tr>
<td><strong>Practical</strong></td>
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<tr>
<td>Learners use structured activities to learn and practise skills safely.</td>
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</tr>
<tr>
<td><strong>Computer Based Learning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learners work individually on self-paced learning packages managed by computers. Teachers assist learners to use technology and progress through units.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Method</td>
<td>Teaching Activities</td>
<td>Learning Strategies</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Small Group Tuition</strong></td>
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</tr>
<tr>
<td>Teachers and learners work together, and learners work in small groups, on collaborative and cooperative learning activities.</td>
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<tr>
<td><strong>Self-directed Learning</strong></td>
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<tr>
<td>Learners work independently, teachers supervise and manage the learning process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Method</td>
<td>Teaching Activities</td>
<td>Learning Strategies</td>
</tr>
<tr>
<td>-----------------------</td>
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</tr>
<tr>
<td>Field Work</td>
<td>Learners participate as a group in exercises or activities usually associated with the job.</td>
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</tr>
<tr>
<td>Industrial Visits</td>
<td>Learners observe routines, equipment or materials demonstrated by industry experts.</td>
<td></td>
</tr>
<tr>
<td>Vocational Experience</td>
<td>Learners are supervised at the workplace with minimum contact with teacher.</td>
<td></td>
</tr>
</tbody>
</table>
SELECTING LEARNING STRATEGIES

Identify those teaching methods that would be appropriate for the curriculum module that you are developing.

Take each teaching method in turn and ask the four questions. Place your answers, 'YES' or 'NO', in the column under the relevant teaching method. Then, assess whether or not each method is suitable for teaching the module.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Modified Lecture</th>
<th>Integrated Theory/Practical</th>
<th>Practical</th>
<th>Computer Based</th>
<th>Small Group</th>
<th>Self-Directed</th>
<th>Field Work</th>
<th>Industry</th>
<th>Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the teaching method appropriate for the type and ability level of the learner?</td>
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<tr>
<td>Does the teaching method allow learners to be actively involved in their learning?</td>
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<tr>
<td>Is the teaching method suitable for the learning strategies to be used?</td>
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<tr>
<td>Is the teaching method consistent with the learning outcomes and assessment criteria?</td>
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<tr>
<td>Is this teaching method appropriate for teaching this module?</td>
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</table>
## ALLOCATING TEACHING TIME

<table>
<thead>
<tr>
<th>MODULE CONTENT</th>
<th>Modified Lecture</th>
<th>Integrated Theory/Practical</th>
<th>Practical</th>
<th>Computer Based</th>
<th>Small Group</th>
<th>Self-Directed</th>
<th>Field Work</th>
<th>Industry Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcome 1</td>
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<td>Learning Outcome 2</td>
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<td>Learning Outcome 3</td>
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<td>Learning Outcome 4</td>
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<td>Learning Outcome 5</td>
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<td>Learning Outcome 6</td>
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<td>Learning Outcome 7</td>
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<td>Learning Outcome 8</td>
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<td><strong>TOTAL</strong></td>
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</tbody>
</table>
1 PURPOSE:

2 RELATIONSHIP TO STANDARDS:

3 PREREQUISITES:

4 CO-REQUISITES:

5 NOMINAL DURATION:
6 DELIVERY:

7 ASSESSMENT STRATEGY:

8 RECOGNITION OF PRIOR LEARNING:
LEARNING OUTCOMES

LEARNING OUTCOME 1:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
LEARNING OUTCOME 2:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
LEARNING OUTCOME 3:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
LEARNING OUTCOME 4:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
LEARNING OUTCOME 5:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
LEARNING OUTCOME 6:
Learners will be able to

ASSESSMENT CRITERIA:
To show that they have achieved this learning outcome, learners must be able to:

CONDITIONS FOR LEARNING AND ASSESSMENT:

ASSESSMENT METHODS:
CONTENT AND LEARNING STRATEGIES:
NSW TAFE COMMISSION IMPLEMENTATION REQUIREMENTS

1  PREVIOUS ACCREDITATION: (If Applicable)

Module Name:
NSW Module No:  Duration:

2  SUGGESTED PATTERNS OF ATTENDANCE:

3  TEACHER QUALIFICATIONS:

4  PART TIME TEACHER RATE OF PAY:

5  ASSESSMENT:
   5.1  GRADE CODE:
   5.2  ASSESSMENT DETAILS:
   5.3  MODULE COMPLETION REQUIREMENTS
## 6 HUMAN RESOURCES REQUIREMENTS

<table>
<thead>
<tr>
<th>Teaching Methods</th>
<th>Hours</th>
<th>S:T Ratio</th>
<th>OnClass Support</th>
<th>OffClass Support</th>
<th>Guest Lecturer</th>
<th>Comments and Explanation</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
7 MINIMUM ESSENTIAL RESOURCES:

7.1 TEACHING/LEARNING RESOURCES:

7.2 MAJOR TEXT AND REFERENCES:

7.3 ACCOMMODATION REQUIREMENTS:

7.4 PLANT AND EQUIPMENT:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>ESTIMATED COST AS AT</th>
</tr>
</thead>
</table>

TOTAL
### 7.5 CONSUMABLES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>ESTIMATED COST AS AT</th>
</tr>
</thead>
</table>

TOTAL

### 7.6 LEARNER PURCHASES:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>ESTIMATED COST AS AT</th>
</tr>
</thead>
</table>

TOTAL

### 7.7 MODULE ASSESSMENT RESOURCES:
8  EQUIVALENCES:

9  EXEMPTIONS:

10  ADDITIONAL INFORMATION: