

# Technology (2003)

## Years 1 to 10 Sourcebook Guidelines (Part 6 of 7)

*Note:* The PDF version of this document has been split into sections for easier download. This file is Part 6 of 7.

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## Curriculum evaluation

When curriculum is evaluated, a number of factors need to be considered:

- the purpose of the curriculum evaluation
- the role of accountability and improvement
- data collection and analysis
- reporting.

Other considerations should include deciding who will perform the evaluation and who will manage the evaluation, oversee the tasks and outline the timeline within which the evaluation will be conducted.

The timing of the evaluation is another consideration. It may take place at the conclusion of a program, unit or period of time. Ongoing evaluation allows continuous refinement of a program. End-point evaluation enables a holistic picture of a program or unit to be formed. The timing of evaluation depends on its purpose.

An identification of key stakeholders is also important. These may include students, teachers, school administrators, parents/carers and community members.

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### Purpose of the curriculum evaluation

The purpose of curriculum evaluation is to provide a basis for decision making about the need for and direction of change. It may provide reassurance that current programs and practices are continuing to meet specific needs. On the other hand, evaluations may show discrepancies between students' needs and the current programs and practices. This may mean that changes need to be made in one or more areas.

#### Role of accountability and improvement

Accountability and improvement in curriculum evaluation depend on the *appropriateness* and/or *effectiveness* and/or *efficiency* of what is being evaluated.

Appropriateness and/or effectiveness and/or efficiency may be used to evaluate:

- student learning in relation to the demonstration of learning outcomes resulting from planned experiences
- school curriculum materials that document school programs, units and activities and their relationship to syllabuses and the needs of students
- school support for curriculum planning and implementation
- the use or implementation of school programs, units and activities.

#### Student learning in relation to the demonstration of learning outcomes

The *appropriateness* of the core learning outcomes chosen to be the focus of learning is evaluated by gathering data and making judgments about the extent to which the resultant learning outcomes match the expected learning outcomes for particular groups of students.

Consider:

- what outcomes students are demonstrating
- whether students' demonstrations of learning outcomes are appropriate, given the starting points of students' understandings
- whether the expectations of the teachers and school community about the levels of students' demonstrations are appropriate, given the starting points of students' understandings.

### School curriculum materials

The *appropriateness* of the materials used to document school programs, units and activities is evaluated by gathering data and making judgments about the extent to which this documentation matches the learning needs of students, and syllabus and policy requirements.

Consider the extent to which school program, unit and activity documentation about learning and assessment:

- reflects an outcomes approach
- identifies and caters for the characteristics and needs of students, including those in target groups
- acknowledges and incorporates students' life experiences and interests
- is appropriate to the diverse learning styles of students and includes opportunities to use physical activity as a medium for learning
- caters for the possible range of student development levels
- describes planning for both learning and assessment
- reflects the equity principles and considerations
- is consistent with the characteristics of worthwhile programs, units and activities
- focuses on core learning outcomes and incorporates core content
- is consistent with relevant school authority policies.

The *effectiveness* of school program, unit and activity documentation is evaluated by gathering data and making judgments about the extent to which it has the potential to impact on student learning as measured through students' demonstrations of learning outcomes.

Consider the extent to which school program, unit and activity documentation about learning and assessment:

- adds value to student learning, given the starting points of students' understandings
- displays continuity in the planned development of conceptual understandings and caters for a range of developmental levels
- incorporates assessment as a learning opportunity and uses the information gathered to inform future planning
- leads to the demonstration of learning outcomes
- maximises active student engagement and reflects the characteristics of worthwhile activities
- allows multiple opportunities in a range of contexts for demonstrating learning outcomes including across key learning areas, cross-curricular priorities and extracurricular contexts
- establishes clear expectations for student performance
- incorporates a process for making consistent judgments
- promotes the use of strategies and techniques that reflect the nature of learning in particular key learning areas.

The *efficiency* of school program, unit and activity documentation is evaluated by gathering data and making judgments about the amount of resources required or effort needed to produce and implement the documentation.

Consider the extent to which the school program, unit and activity documentation requires physical, human and material resources in its preparation and implementation.

### School support for curriculum

The *appropriateness* of school support for curriculum planning and implementation is evaluated by gathering data and making judgments about the extent to which physical and human support match the curriculum needs of teachers, paraprofessionals, parents/carers and students.

Consider the extent to which physical resources:

- facilitate demonstrations of learning outcomes of the syllabuses
- allow the provision of learning spaces and storage areas for both current and future needs
- match student and program needs
- promote safe practices.

Consider the extent to which human resources enable learning opportunities to be offered that match the needs of students' learning.

The *effectiveness* of school support is evaluated by gathering data and making judgments about the impact that physical and human support have on students' learning and demonstrations of learning outcomes, and on the curriculum knowledge and expertise of teachers, paraprofessionals and parents/carers.

Consider the extent to which physical resources:

- allow equitable access to learning spaces
- are of suitable quality and quantity to support students in their learning
- are planned to identify future learning needs.

Consider the extent to which human resources:

- enable the maintenance and enhancement of the professional knowledge of teachers
- use the elaborations of learning outcomes as a basis for developing shared understandings of the core learning outcomes
- develop skills to assist consistency of teacher judgments
- encourage and assist teachers to use sourcebook modules as a model for planning for learning in, and assessment of, units that focus on learning outcomes, core content and the cross-curricular priorities
- encourage and assist teachers to access information in the sourcebook guidelines to inform their planning for learning and assessment so that it is inclusive and relevant to student needs
- identify and utilise curriculum expertise both within and outside the school
- utilise a range of strategies that enable all members of the school community to develop a shared understanding of the learning outcomes of the school curriculum
- engage in support activities that promote the outcomes approach described in the syllabuses.

The *efficiency* of school support is evaluated by gathering data and making judgments about the amount of physical and human resources required or the effort needed to support curriculum planning and implementation.

Consider the extent to which physical resources:

- are purchased and distributed to maximise student learning
- are managed to maximise use
- provide value for money.

Consider the extent to which human resources are organised in a timely and efficient manner to maximise understandings of syllabuses and associated curriculum materials.

### **Use or implementation of school programs, units and activities**

The *appropriateness* of the use or implementation of school programs, units and activities is evaluated by gathering data and making judgments about the extent to which implementation strategies and pedagogy match the learning needs of students and syllabus and policy requirements.

Consider the extent to which school programs, units and activities:

- match their stated intentions
- match the needs of particular students
- are modified or adapted according to ongoing feedback from students.

The *effectiveness* of the use or implementation of school programs, units and activities is evaluated by gathering data and making judgments about the extent to which implementation strategies and pedagogy impact on students and student learning.

Consider the extent to which school programs, units and activities:

- include resources that enhance students' opportunities to learn
- actively engage students in the learning process and provide opportunities for them to negotiate the sequence and pace of their own learning
- challenge students
- involve students in becoming aware of what they are learning and include opportunities for reflection and self-assessment
- provide students with time to produce work of a high standard
- provide opportunities and sufficient time for students to demonstrate learning outcomes in a range of contexts
- incorporate assessment that enables consistent judgments to be made about students' demonstrations of learning outcomes
- lead to the planning of future learning opportunities for students who have not yet demonstrated the core learning outcomes.

The *efficiency* of the use or implementation of school programs, units and activities is evaluated by gathering data and making judgments about the amount of resources required or effort needed for implementation.

Consider the extent to which the use or implementation of school programs, units and activities requires physical, human and material resources.

### **Data collection and analysis**

Data sources and modes through which the data could be collected should be identified. Modes of data collection could include analyses of the program, interviews, focus groups, discussions and questionnaires and must be appropriate to the sources. A data collection matrix detailing focus questions, data sources and modes of collection may be an efficient and beneficial representation of the evaluation to be conducted.

Both qualitative and quantitative data should be analysed to ensure that the responses to the focus questions are accurately represented.

### **Reporting**

Reports should present the results of the evaluation clearly, simply and accurately and should be able to be accessed and considered by all stakeholders. Reports should identify conclusions and recommendations for future program development based on these conclusions.

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# Glossary

For the purposes of this syllabus, the following definitions have been adopted:

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| <b>Appropriateness</b>  | refers to suitability for a particular purpose. When 'working technologically' students are provided with opportunities to consider the aesthetic, cultural, economic, environmental, ethical, functional and social appropriateness of products.   |
| <i>aesthetic</i>        | refers to a product's appeal to a user. Consideration of aesthetic appropriateness allows students to make judgments about products and their uses in terms of touch, taste, sound, sight, smell and use of space.  |
| <i>cultural</i>         | consideration of the beliefs, nuances, practices and dynamic nature of different cultural and ethnic groups in the application of technology, and the effects that a product or process may have on those groups.   |
| <i>economic</i>         | consideration of the immediate and long-term costs to individuals and environments of the application of technology and the impacts of those costs over time.   |
| <i>environmental</i>    | involves making judgments about the balance between the benefits of new products and the non-beneficial environmental impacts and consequences.   |
| <i>ethical</i>          | assessment of the application of technology based on personal and shared beliefs.   |
| <i>functional</i>       | considerations of the product's suitability in relation to the user's intended purpose.   |
| <i>social</i>           | consideration of the needs and conventions of societies and groups within those societies in the application of technology and the effects that technology has on those groups.   |
| <b>Contexts</b>         | the circumstances or particular situations in which knowledge of technology, capability with technology, and practices and dispositions of 'working technologically' may be applied. Technology key learning area contexts may include personal and global, agriculture, business, community, home and family, industry, leisure and recreation, and school.  |
| <b>Design brief</b>     | a summary of the aims of a design and the kind of product that is needed. A design brief is a statement that explains the challenge or the task. It may include a background statement and a written description of the specifications or details about the resources, for example, time, cost, materials, equipment, audience. Some design briefs include guidance regarding ways of evaluating the solution to the given task. A design brief is written to address a design challenge. |
| <b>Design challenge</b> | a situation, problem or task that requires technology-related knowledge, practices and dispositions for the challenge to be met.  |
| <b>Design proposal</b>  | a workable plan that communicates design ideas. It may include drawings, plans, various options and their advantages or disadvantages, and strategies for managing resources.   |

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| <b>Ideation</b>                  | as described in the learning outcomes of the Technology Practice strand, ideation involves considering problems in new and creative ways, generating possible ideas or solutions, selecting ideas with the view of developing products that meet needs or wants, or capitalising on opportunities and communicating ideas in design proposals.  |
| <b>Handling collection</b>       | a collection of artefacts that could be explored for a variety of purposes.   |
| <b>Investigation</b>             | as described in the learning outcomes of the Technology Practice strand, investigation involves the identification and analysis of needs and wants, opportunities, possibilities and challenges to generate a range of creative ways to develop possible solutions. It includes considerations of contexts, management and aspects of appropriateness.  |
| <b>Logic</b>                     | the logic of a system is the organisation of the components in systems and subsystems and the links between them.   |
| <b>Management</b>                | the act or manner of handling, directing or controlling. It is an integral and important aspect of learning in the Technology key learning area. Management skills are developed as learners work with people, resources, opportunities and constraints.  |
| <b>Products</b>                  | the result of the application of technology. Products may include artefacts, processes, systems, services and environments.   |
| <b>Systems</b>                   | ways of organising components or combinations of components so that they work together to achieve specific purposes or goals. Systems consist of inputs, processes and outputs and may function in simple or complex ways.  |
| <b>Technology</b>                | involves the processes of exploring possibilities and envisioning the development of practical, purposeful and innovative products to meet human needs and wants, capitalise on opportunities and extend human capabilities.  |
| <b>Technology practice</b>       | is the design element of 'working technologically'. It refers to the actions of investigation, ideation, production and evaluation that people engage in when they design and develop products. These actions may be undertaken in a variety of combinations that can be cyclic, iterative or recursive in structure. It is not restricted to a rigid sequence of distinct stages.  |
| <b>Technology project folio</b>  | a collection of ongoing or completed student work. It may include journal entries or notes, sketches, drawings, designs, plans, multimedia presentations, models or products. It provides a map of how the student considered and addressed the design brief or challenge. A Technology project folio is different from a student folio as it relates to a design challenge or design brief rather than specifically to the demonstration of learning outcomes. |
| <b>'Working technologically'</b> | refers to ways in which people combine technology practice, information, materials, and systems interwoven with appropriateness, contexts and management to develop products that meet needs, wants and opportunities.  |