



THE
le@rning
FEDERATION

schools online curriculum content initiative

THE LE@RNING FEDERATION Project Management Framework

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Table of Contents

1	INTRODUCTION	1
2	PRODUCTION PROCESS	2
2.1	Operational support for the Project Management Framework	2
2.2	Management of online content development	2
2.3	Project set-up	2
2.3.1	Project Scoping Brief	2
2.3.2	Educational soundness.....	3
2.3.3	Project management.....	3
2.4	Request for tender	5
2.5	Evaluation and tender selection	5
2.6	Content procurement	6
2.6.1	Learning object design.....	6
2.6.2	Development.....	7
2.6.3	Content review	7
2.6.4	Development and unit testing	7
2.6.5	Acceptance testing.....	7
2.7	Release	7
3	METHODOLOGY	8
3.1	User-centred design	8
3.2	Learning object model*	8
3.3	Instructional design	9
4	CONSULTATIVE PROCESS	10
4.1	Curriculum Area Reference Groups and Working Parties	10
4.2	Teacher Focus Groups	11
4.3	User Focus Groups	11

1 Introduction

This document outlines The Learning Federation *Project Management Framework*. The aim of the *Project Management Framework* is to produce consistent, high-quality content within agreed timeframes and budgets. The content must fulfil educational and technical requirements, and be ultimately supported and used by teachers and students in Australian and New Zealand schools.

Connected to and critical to the *Project Management Framework* is The Learning Federation *Quality Assurance Framework for Online Content Development*. The latter framework describes processes that ensure guidelines and specifications relating to educational soundness, intellectual property and interoperability inform development of newly commissioned content and content contributed to the resource pool.

The Learning Federation's website <http://www.thelearningfederation.edu.au> outlines the progress of the Initiative, provides access to key documents and reports, as well as forums and services so that stakeholders and the public are kept informed. The website also contains a link to the supplier database with pertinent information for registered organisations.

2 Production process

2.1 Operational support for the Project Management Framework

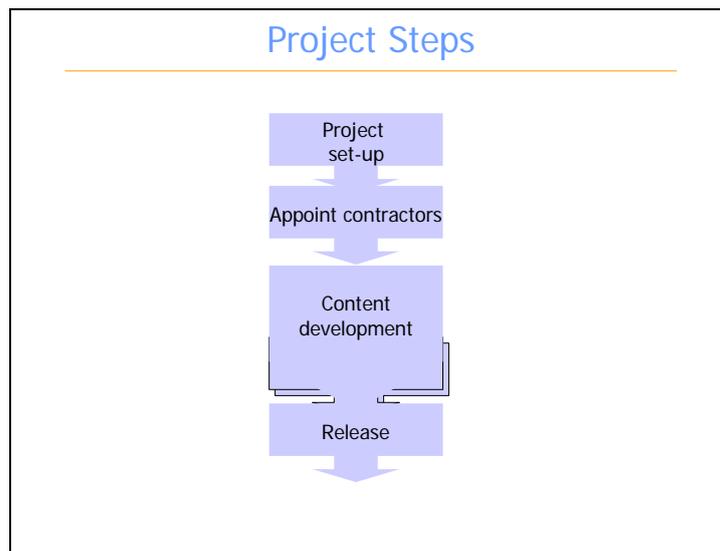
In order to ensure that the highest possible proportion of the Initiative's budget is spent on developing content, it is important not to re-invent processes, standards and infrastructure for each individual project. This is especially important for managing the development of educational online content. Experience has shown that this is a very complex, and potentially very expensive process.

The Le@rning Federation provides overall project management and quality assurance services for all projects, making available a set of published specifications, guidelines and templates.

2.2 Management of online content development

The Le@rning Federation provides overall project management and quality assurance for all content procurement.

A generic set of four project steps for the development of online content and their associated management is set out in the diagram below.



2.3 Project set-up

2.3.1 Project Scoping Brief

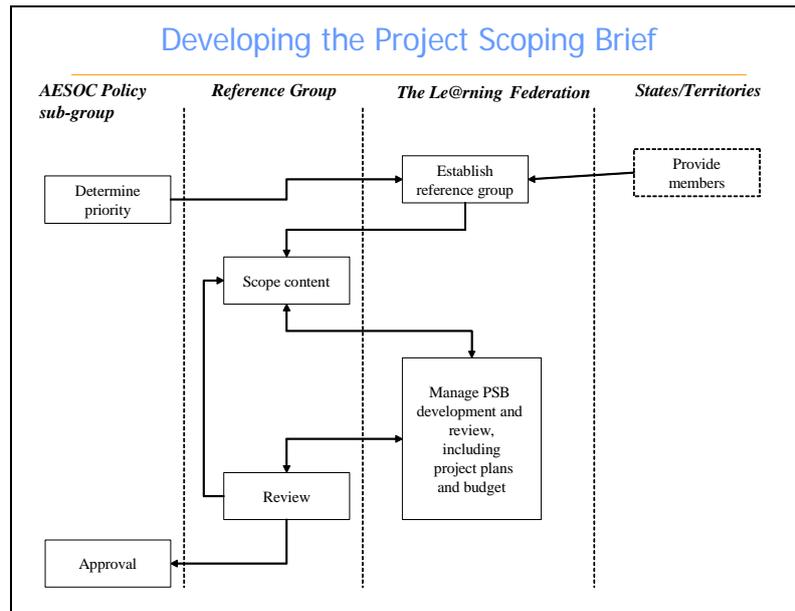
Project set-up involves the development of the *Project Scoping Brief* (PSB), which details the scope and priorities for a specified content priority area. PSBs are developed for all content priority areas of The Le@rning Federation.

The PSB describes key requirements for content development within the content priority area and identifies key areas for online content development. The key areas for online content development are derived from a gap analysis of online content, identified areas of student

underachievement from national and international testing, MCEETYA priorities and National Statements of Learning. The PSB provides both an initial conceptual framework for content development and draft recommendations for individual projects to be developed within the area.

A Curriculum Area Reference Group (CARG) or project specific working parties, made up of curriculum experts from each of the states and territories, develops the PSB.

The Le@rning Federation manages the processes of developing the PSBs. It monitors issues such as breadth, balance, equity and cross-curriculum perspectives. It provides regular project reports to jurisdiction Contact Liaison Officers (CLOs) to assist the CARG or working party in refining the PSB for the duration of development in the content priority area.



2.3.2 Educational soundness

The CARG or working party also create a detailed set of educational soundness indicators for each project within each specified content priority area. The specifications for educational soundness are based on the convergence of instructional design theory and contemporary learning theory.

The specifications are used to assess online curriculum content in terms of the following principles:

- learner focus
- integrity
- useability
- accessibility.

2.3.3 Project management

The Le@rning Federation is responsible for the project management of all content procurement projects.

Project managers provide high-level project management and leadership expertise in multimedia and ICT projects. They are responsible for the overall management of each of the content procurement projects for The Le@rning Federation.

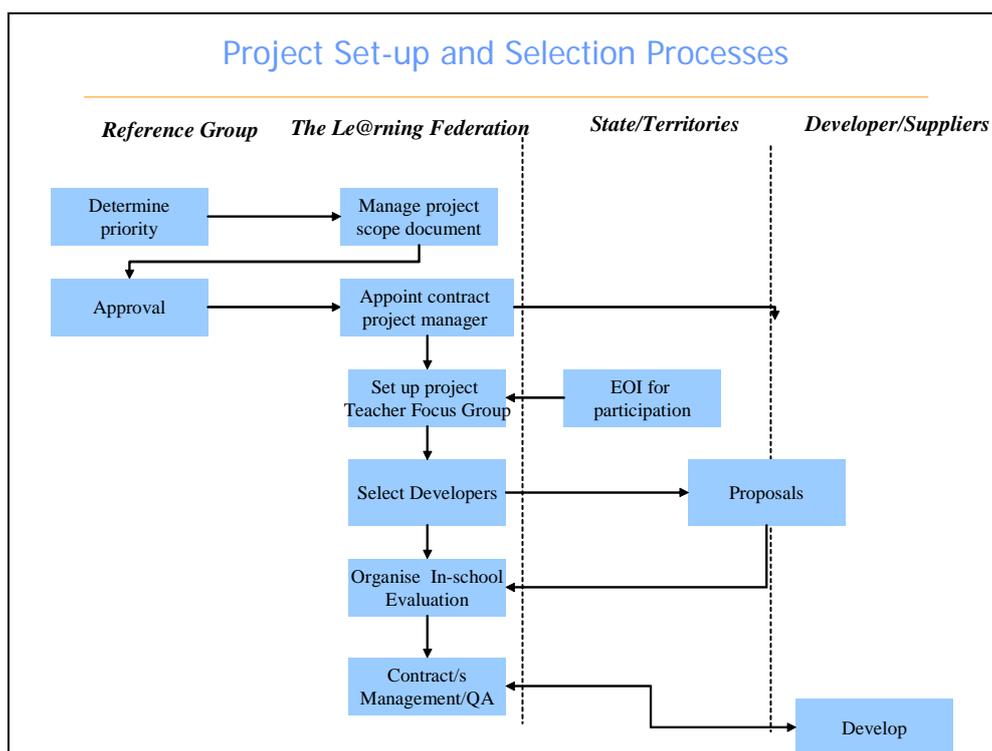
In particular, The Le@rning Federation is:

- responsible for engaging the educational specialists, subject matter experts and writers
- accountable for tendering and selection of multimedia developers
- responsible for ensuring experts and users are consulted
- responsible for quality assurance processes.

The Le@rning Federation is directly responsible for engaging and managing the education component for each project. This comprises of writers, subject matter experts and education specialists.

The Le@rning Federation is responsible for coordinating and establishing a Teacher Focus Group (TFG) for each project and User Focus Groups (UFGs) for student-based in-school evaluation. (Refer to Section 4 Consultative Process.)

Each TFG consists of practising teachers, who provide user-centred advice throughout the project content-development cycle. A database of UFG schools for trialling content in development with students is established.



The project manager liaises directly with the Quality Assurance Unit to develop and implement quality assurance processes for the project. All TFG and UFG participation for the purpose of scheduling quality assurance is also managed through The Le@rning Federation.

2.4 Request for tender

A request for tender is released for developers to join a Multimedia Developers Panel and be considered for the development of content across all content priority areas. Respondents are required to indicate their preference for content areas/projects based on experience and expertise. They also provide specific information in relation to their capability to develop online educational content for the project and the specified audience.

The Request for Tender document comprises of three parts:

- **Part A: Tender information and tenderer's response** includes the conditions for responding to The Le@rning Federation's Request for Tender, as well as the evaluation process and criteria for evaluation and selection of tender.
- **Part B: Requirements brief** defines the requirements for curriculum areas, including an overview of projects.
- **Part C: Standing offer deed of agreement** defines general contractual requirements for successful tenderers.

2.5 Evaluation and tender selection

The Le@rning Federation is responsible for managing tender evaluation and selection.

Selection of developers to the Multimedia Developers Panel is based on the following criteria developed by The Le@rning Federation:

- demonstrated expertise in the development of quality interactive materials
- innovative and creative approaches to the use of technology and instructional design
- willingness and ability to work with educationalists and/or external content experts and organisations
- where possible, experience in developing multimedia materials for an educational purpose and audience
- demonstrated ability to meet timelines
- willingness to work closely with project management teams
- value for money.

The Le@rning Federation's Project Director signs off the recommendations of the selection panel.

The Standing Offer Deed of Agreement is then finalised with each successful tenderer/s.

The major control on financial risk by The Le@rning Federation is through having a strong focus on project management. This is based on sound business practice and standards supported by software linked into the budget and financial reporting system. The tender documentation requires the tenderer to supply information to demonstrate their financial viability and capacity to provide services throughout the term of the contract.

The Tender Evaluation Committee evaluates risk factors and tenders on a range of criteria to ensure the successful tenderer/s have the necessary expertise, knowledge and business capability to meet the tender requirements, and deliver the required product/s on time and on budget.

The Tender Evaluation Guidelines and Request for Tender documents detail the process undertaken and the information required by the Tender Evaluation Committee.

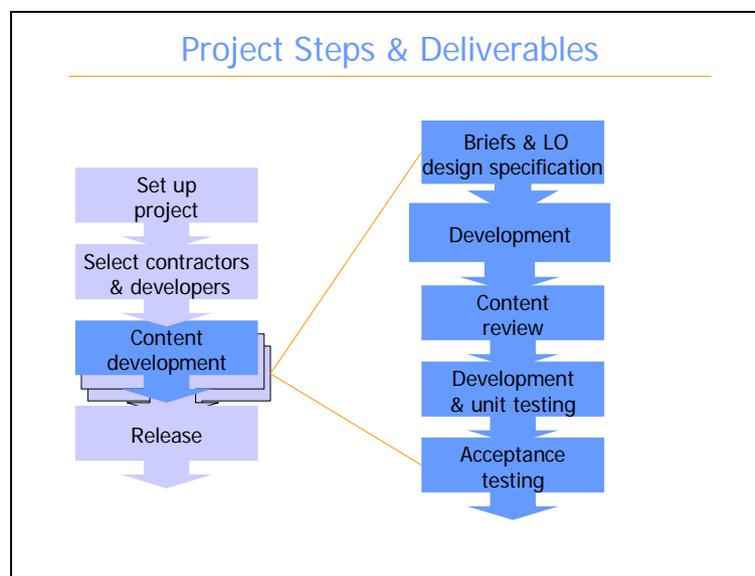
2.6 Content procurement

Content procurement refers to all stages in the content development cycle for a project. Dividing the content development cycle into manageable stages assists project quality management by ensuring adherence to specifications, user input and feedback.

The Le@rning Federation oversees the projects at each stage, paying attention to the contract deliverables, deadlines, and to the specifications and guidelines. It also undertakes the quality assurance processes.

The Le@rning Federation also supports the contractors by facilitating access to the potential users (teachers and students), an essential part of user-centred design. Since contractors have to ensure that they access users from all parts of Australia and New Zealand, representative of the demographic, there is the potential for systems to be exposed to requests from numerous contractors. The management of user input by The Le@rning Federation minimises this risk.

At this stage, a TFG is established to provide advice during content design and development.



2.6.1 Learning object design

The selected developer works closely with the subject matter experts to prepare a learning object design specification. This document details the content treatment, including scripts/storyboards, functional requirements and application of technology for each phase of the project.

The project manager/education specialist/CARG–working party and TFG evaluate the learning object design specification against the content specifications using the appropriate test and evaluation instruments. Feedback is then provided to the project manager. The project manager coordinates the evaluation of the technical specification through Quality Assurance Unit. A report is compiled by the project manager and forwarded to the developer.

The developer then implements the changes or variations to the original concept design, and the modifications are checked and signed off by The Le@rning Federation. A project progress report is forwarded to the CARG–working party. (The *Quality Assurance Framework* document describes each of these steps in greater detail.)

Where required, scope variations are applied and signed off by The Le@rning Federation.

Contracts, including project scope and price, are usually finalised at this stage for this phase of content development.

2.6.2 Development

The development of the content is phased. Initially, content developers produce components of objects and sequences to allow the testing of content for useability and learning with students and teachers. The purpose of this phase is to identify problems early in the development cycle, when it is less expensive to modify the content.

Content in development is progressively loaded into the Exchange, which is The Le@rning Federation's central content facility. Technical (interoperability) and intellectual property rights management testing and evaluation then commence.

The Le@rning Federation may also procure licensed extant content to fulfil content priority requirements. Procurement of extant content for under license only occurs when it is deemed by The Le@rning Federation to be more cost effective and of sufficient educational and technical quality. All extant content is tested by education specialists and subject matter experts and undergoes technical quality assurance.

2.6.3 Content review

The content review involves testing and evaluating the prototype in terms of educational soundness (useability, content integrity and learner focus).

During this phase, users are involved in testing and evaluation of components of content in development within selected schools

An In-Development Review report is then prepared and used by The Le@rning Federation in discussion with the developer.

2.6.4 Development and unit testing

The content provider continues to develop specific chunks of deliverable content as per specifications. The content provider is responsible for functional and technical (unit) testing of the content, prior to loading it into the Exchange.

2.6.5 Acceptance testing

On completion of each phase of content development, acceptance testing is undertaken, prior to publishing the content. The Le@rning Federation engages the services of a reputable and independent testing agency. This process is put in place in conjunction with acceptance testing procedures associated with the publishing content.

2.7 Release

The Project Director approves the content for publishing.

The Project Director provides a completion report to the Curriculum Corporation Board.

The content is made available to education jurisdictions in the Exchange, where online content is stored and distributed.

3 Methodology

3.1 User-centred design

The methodology to be applied to content development follows a model of user-centred design. The methodology includes an iterative approach to functional and instructional design, and is based on the International Standard for user-centred design: *Human-centred design process for interactive systems, ISO 13407:1999 (E)*

The main principles of user-centred design are:

- **The active involvement of users**
Use people with real insight into the context in which the product will be used (teachers, students).
- **Iterative design and development**
Use feedback from end-users at all stages of development – simple paper mock-ups, scripts, storyboards to prototypes (semi functional) run on computers.
- **Multidisciplinary design teams (developer teams)**
Involve education experts, multimedia developers, instructional designers and technical experts in the production of materials.
- **Appropriate use of media for treatment of content**
Understand and specify the context of use, and audience capabilities (environmental and social).

User input is through TFGs and UFGs for each of the projects. These groups and evaluation processes are representative of students and teachers nationally. The role of these groups is outlined in Section 4 of this document.

User involvement informs the development of the content in terms of relevance, accessibility and content integrity. The specifications for content design directly relate to the needs and expectations of users.

3.2 Learning object model*

The Initiative uses a learning object approach to content design and development. Learning objects consist of one or more files designed to either stand alone, or work as a component of a learning sequence. A learning sequence may be created during the development process or constructed by the end user to suit their specific learning and teaching requirements.

At the most granular level, a learning object must have content integrity and be able to stand alone. The learning object is defined by the integrity of the content rather than the object size and supports diverse teaching and learning activities rather than dictating modes of use. For example, an audio file developed to describe a picture is unlikely to make much sense on its own and, therefore, would not be discoverable as an independent stand-alone learning object. However, the picture and audio combined as a learning object should have educational value and integrity; if it doesn't, then it probably should not exist.

This approach to content development will maximise the opportunity for customisation of the learning objects by teachers to meet the learning needs of classes, groups or individual students. A user-centred content development methodology based on sound educational practice and applied to digital resource design and development is essential to meet the needs of diverse learners and learning contexts.

Design of the content will ensure that online experiences are integrated into offline classroom activities. Activities will be created for use in a range of contexts and across learning areas.

Content development will focus on providing virtual experiences that model and simulate concepts that are difficult to teach or are unable to be easily reproduced in the classroom. Collaborative learning opportunities will be explicit to enable students to move beyond their current knowledge, extend the classroom into real-world domains and enhance understanding through interaction with a range of people.

* Content Formats

Online content may be in the form of learning objects, digital resources and software applications and tools.

3.3 Instructional design

Instructional design is the practice of organising information into meaningful learning experiences. This is to ensure access, motivation, purpose, structure and comprehension to facilitate learning that results in construction of skills, knowledge and understanding. It involves a process that has application within the context of both the development cycle (production of the learning objects) and the delivery of online learning objects (use, assembly, and purposing of the learning objects).

Sound instructional design ensures successful development of multimedia modules. Generally, the purpose and structure of the content must be readily apparent; encouraging connections with related material; directing pathways through content; and setting clear aims for students to target.

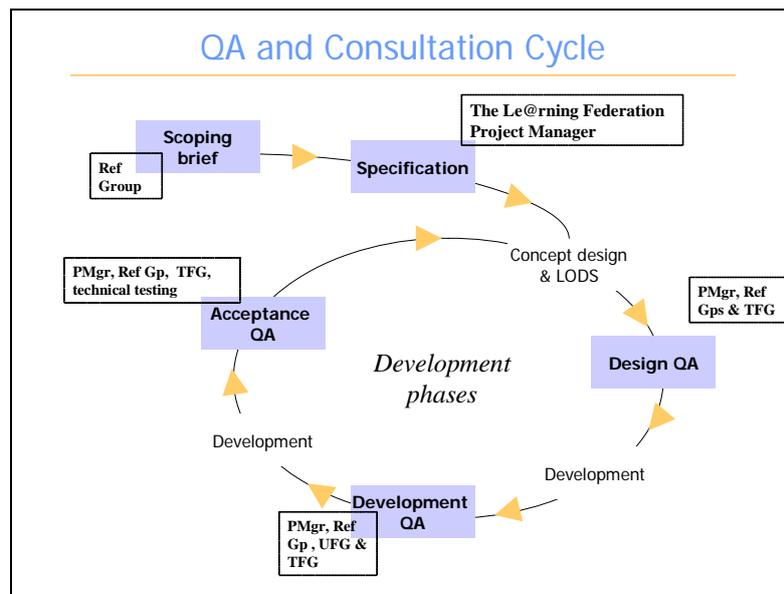
Instructional design must ensure that:

- the learning object and/or module is attractive in layout and design
- the user interface enables clear and easy navigation
- the module and/or learning object can easily be changed by developers or contextualised by the user to accommodate changing needs
- there is an appropriate mix of multimedia in an educational context
- the selected technologies best support the learning process and outcomes.

4 Consultative process

While some consultative groups are generic and operate across a number of projects, others are established for each project within a specified curriculum area. Participation in consultative groups are funded by The Le@rning Federation through the projects, including payments to participants for travel, accommodation and teacher release.

The process undertaken for content development and involvement of respective consultative groups in the process is illustrated in the diagram below.



The Le@rning Federation establishes the following groups for project consultation.

4.1 Curriculum Area Reference Groups and Working Parties

Each reference group or working party comprises of curriculum experts. The group is responsible for scoping the initial requirements for online content procurement within each content priority area, in particular:

- formation of project objectives
- identification of characteristics and requirements of the content area and audience
- preferred models of instruction and application of media
- review of the PSB as required for the content priority area
- creation of educational soundness indicators for each project.

The role of the reference group or working party is ongoing for the content priority area. Reports on content development projects associated with the content priority area supports the group in refining the PSB.

The reference group or working party for each content priority project area consists of representatives from each of the jurisdictions and other stakeholders.

The following criteria should be considered when identifying personnel to participate:

- demonstrated and significantly high level expertise in the specific curriculum area
- demonstrated knowledge and experience of school education
- experience in educational and/or curriculum initiatives with a national application
- knowledge of and experience in the implementation of ICTs within schools education.

Group members are required to attend at least a one day face-to-face workshop. Subsequent participation is generally via teleconference, discussion groups and response to monthly newsletters.

4.2 Teacher Focus Groups

The Le@rning Federation establishes Teacher Focus Groups (TFGs) for each project within a content priority area via jurisdictions and peak professional associations. The TFG is an integral element of the user-centred content development methodology. It participates directly in review phases for a project.

Members of this group should have the following attributes:

- high-level expertise in the project curriculum area
- knowledge and current experience in teaching within the area
- knowledge and experience of the use of digital resources in teaching and learning
- knowledge of and/or experience in the implementation of ICTs within school education.

Each TFG provides feedback and input to The Le@rning Federation's project managers and content developers via review and evaluation processes conducted throughout the project content-development cycle.

The Le@rning Federation coordinates all TFGs' activities.

Jurisdictions are requested to support the establishment and maintenance of a database of schools for participation in TFGs.

4.3 User Focus Groups

The Le@rning Federation establishes User Focus Groups (UFGs) for each project area. These groups are an integral component of the in-school evaluation and review of content during development.

These groups consist of teachers in schools with students/classes related to the project area. The teachers will be able to demonstrate an interest in the implementation of ICTs and the use of digital resources within teaching and learning. A school's involvement requires a willingness and capability to participate both technically and structurally, along with the endorsement of the principal.

Testing and evaluation methodology and associated instruments are supplied via The Le@rning Federation for school-based testing and evaluation. Project Teacher Focus Group members may be involved in the in-school testing and evaluation. Training is provided accordingly.

Teacher releases for in-school evaluation are funded by The Le@rning Federation.

Education jurisdictions are requested to support the establishment and maintenance of a database of schools for participation in UFGs.

The Le@rning Federation's quality assurance personnel liaise directly with the designated contact person identified in each education jurisdiction.

The Le@rning Federation periodically invites education systems to identify and nominate schools and teachers to be involved for each of the content priority areas in order to maintain a database of schools and teachers for in-school evaluation of content in development.

The scheduling of quality assurance processes for all projects by The Le@rning Federation ensures that schools serving a range of populations are included. It is essential that in-school evaluation covers the geographical and sociocultural diversity of the education systems.