

**EQUELLA®**

# **Overview Whitepaper**

***Version 6.4***

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# Pearson

Pearson is the world's leading education company, offering collaborative teaching and learning solutions for on-campus, online, and blended learning environments. Our award-winning educational technologies, including EQUELLA, are used by millions worldwide because we ensure our products are easy-to-use, client-driven, scalable, and reliable.

The EQUELLA solution plays an important role in Pearson's strategy to provide technologies that mediate the rapidly expanding use of digital resources across global education markets.

EQUELLA is positioned as a learning content management system and is used by a wide range of schools, districts, universities, community colleges, state systems and departments of education, government agencies, and corporations worldwide.

# The EQUELLA Solution

EQUELLA, a digital repository, enables you to search, create, manage and share content, providing one system to suit the needs of your teaching and learning, research, media and library content.

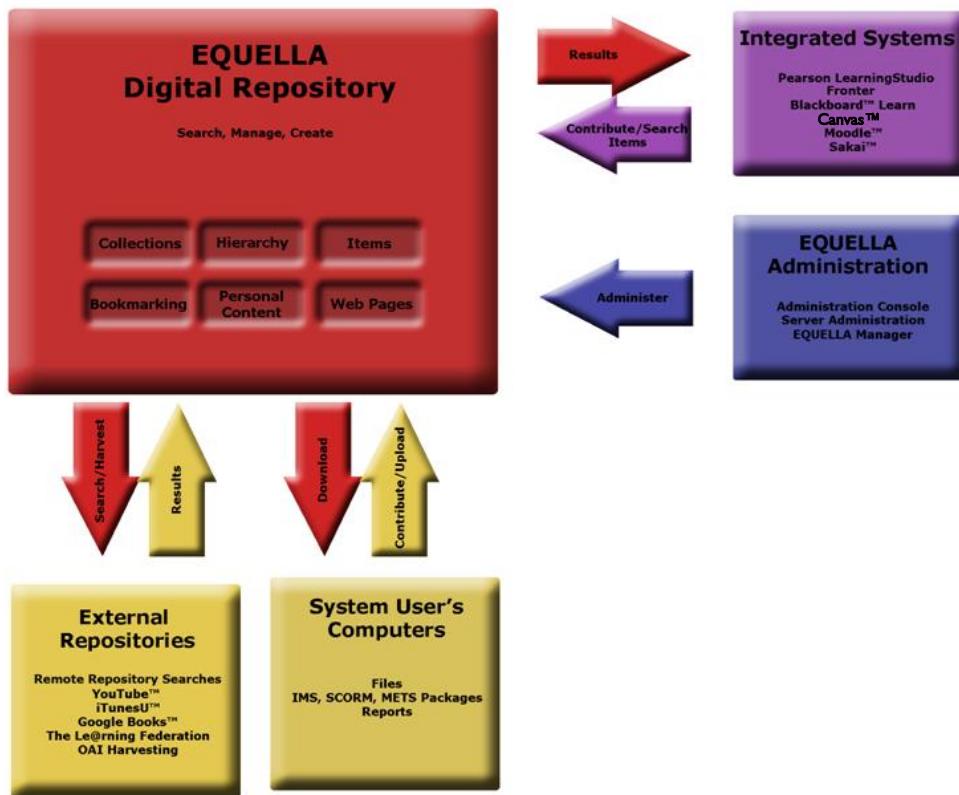
EQUELLA's functionality and flexibility is well-demonstrated by the many ways in which it has been implemented. As well as being used to more effectively manage teaching and learning resources, EQUELLA has been deployed for copyright resource collections; research materials; managing and exposing materials through web sites and portals; content authoring; workflow; institutional policy and organisational resources.

EQUELLA has been designed and developed through extensive collaboration, customisation, and interoperability with institutions, ensuring its suitability for educational markets. This award-winning software is being used worldwide in schools, universities, departments of education, community colleges, as well as government and training institutions. It is evolving the way educators teach online, and also the way students learn with digital resources.

EQUELLA supports version control, has a rich suite of APIs, a fully customisable taxonomy engine and rich search capabilities (including, but not limited to, Boolean, fuzzy, wildcard and proximity). A robust reporting engine, coupled with Google Analytics, will allow both teachers and administrators to track the use of content in many creative ways. As the eLearning landscape continues to evolve, EQUELLA provides significant advantages to schools by delivering teachers and wider institutional communities with access to a centralised digital repository.

Enabling a more flexible, collaborative way to develop an institution-wide repository, EQUELLA will deliver content in the way the educator requires, whether that is through powerful searching or curriculum outcomes. Digital rights management and copyright compliancy protect institutions, removing barriers and concerns associated with sharing, reusing and presenting learning resources licensed from third party providers.

As a customisable solution, EQUELLA complies with all major standards, is designed to IMS specifications, and is SCORM compliant. EQUELLA also enables seamless integration with leading learning management systems (LMS) including Moodle, Blackboard Learn, Canvas, Desire2Learn, Pearson LearningStudio and Fronter, with several others in development. EQUELLA can integrate with multiple LMS systems, while at the same time making it the ideal choice for systems that may be running more than one LMS for any period of time.



**Figure 1 The EQUELLA Solution**

# EQUELLA Digital Repository

The EQUELLA digital repository is a flexible digital library capable of storing, managing and creating a variety of custom item types and associated attachments or digital content.

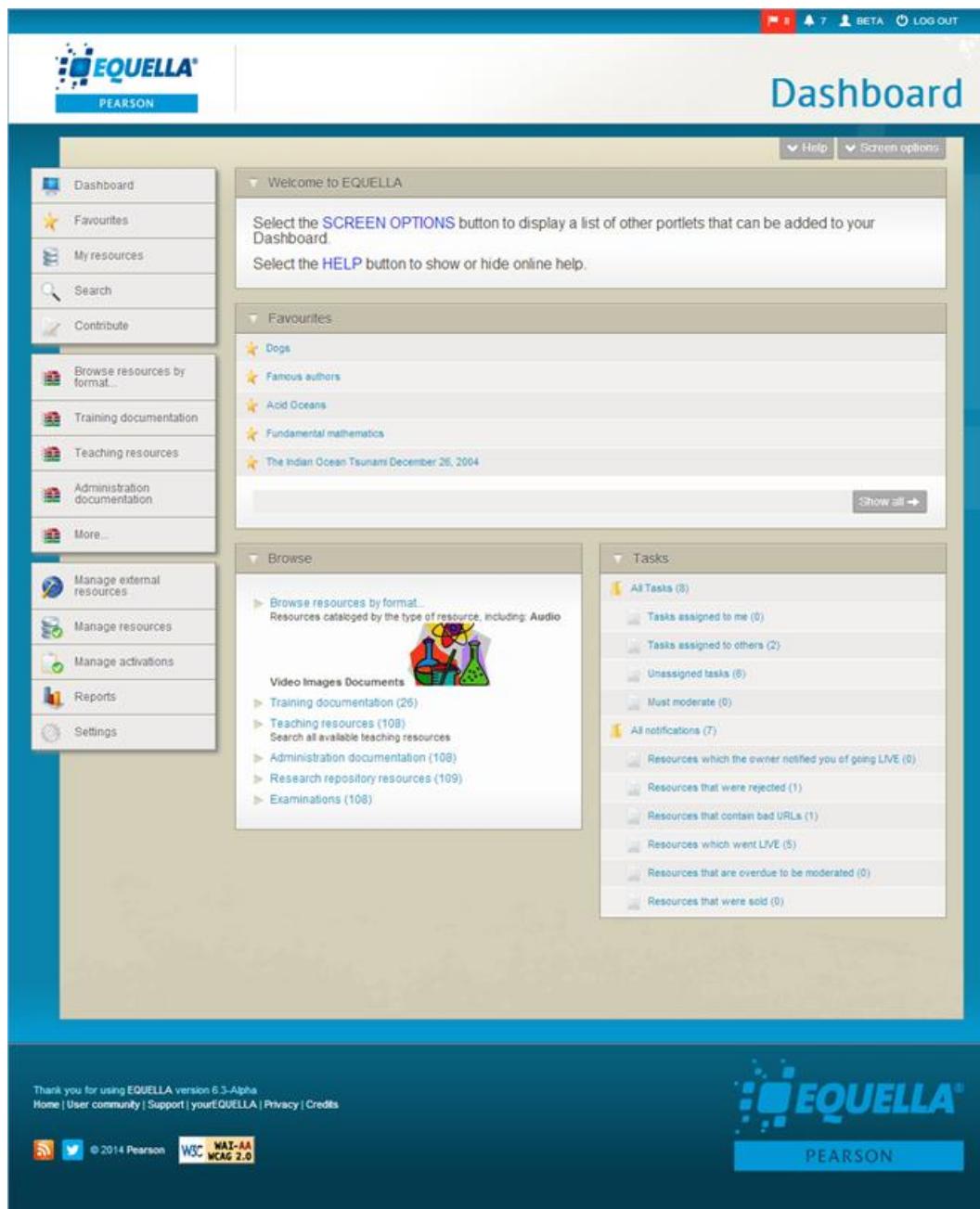
Electronic resources within the repository can be simple descriptive text, learning objects (IMS, SCORM and METS packages), images, sounds, videos, PDFs, Microsoft Word™ documents, ZIP files, web pages, journal articles, book chapters, links to items, and much more.

Among its many features EQUELLA supports:

- collections with customised data entry wizards;
- flexible XML-based metadata schemas;
- basic or complex scripted workflows;
- full document versioning;
- simple through to full metadata-based searching;
- storage of resources in a personal area;
- on-the-fly creation of web pages;
- copyright management of activated items;
- attribution of digital rights to content;
- active user-based notifications;
- attachment MIME type definition;
- automatic creation of thumbnails for uploaded images and PDFs;
- conversion of documents to HTML;
- selection of taxonomy terms from EQUELLA or an SQL data source;
- searching of external data remote repositories;
- flexible editing of permissions for all facets of the application;
- multi-language configuration and display customisation;
- extensive support for many well-known standards;
- seamless integration with a variety of third-party systems; and
- harvesting of collections, individual items, third-party source and Learning Federation content.

These powerful features are configured and managed through EQUELLA's user-friendly Administration Console. Using the Administration Console, your institution's administrators are given total control to model your business process, define your own roles and customise the layout of EQUELLA.

EQUELLA provides a user-friendly interface for users to search, create, store, manage, view, and share content.



**Figure 2 User's view of EQUELLA**

The user's Dashboard page is customisable and typically displays portlets in the central pane that provide a summary of the available content and links to access that content.

The Dashboard page portlet types include: Browse, Favourites, Formatted text, My resources, Quick search, RSS or Atom feed, Recent contributions, Scripted, Tasks and Web page portlets.

# Metadata, wizards and collections

The principal entity used by EQUELLA is the ‘collection’. A collection represents a unique container to store items within EQUELLA. Items include simple types, such as Word™ documents, learning objects and items of curriculum, through to more complex multi-document types, such as lesson plans, learning sequences and online modules.

Each collection contains a metadata schema and a contribution wizard. In addition, collections can also include:

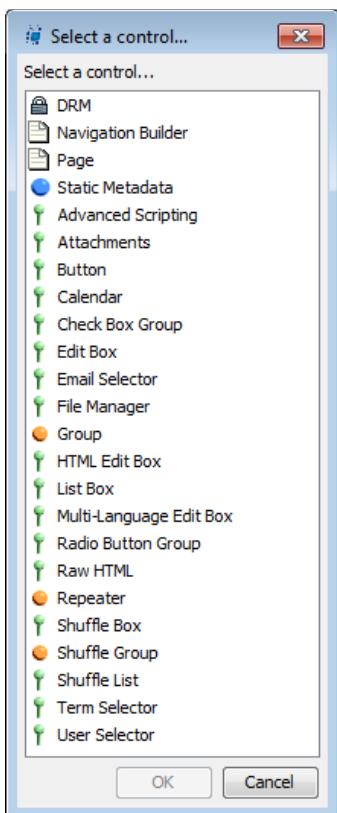
- a workflow definition;
- access control rights;
- display template rules; and
- copyright and digital rights management (DRM) controls.

Collections are configured and managed using a Collection Definition Editor in the Administration Console.

## Metadata schemas

Collection metadata schemas are defined using XML; allowing the system administrator complete flexibility for defining new system item types. This flexible approach allows EQUELLA to support all major metadata encoding schemas as well as any internal schemas that an institution uses. Metadata elements are mapped to one or more wizard controls that are used to create wizard pages. A sequence of wizard pages constitutes a contribution wizard. These wizards are used to collect the required metadata as part of item contribution.

A contribution wizard interface can comprise a large variety of different control types ranging from simple edit or checkboxes through to shuffle boxes and shuffle lists.



**Figure 3 Supported wizard controls**

## Bulk metadata management

The popular features of the EQUELLA Metadata Utility (EMU) deliver enhanced bulk metadata management capabilities. This capability enables users to view items, update, replace and add text to metadata nodes. Users will also be able to bulk edit every metadata node, ensuring seamless metadata management.

Users have the ability to perform the following actions: edit metadata, including; find and replace one or more nodes, set text to specified nodes, specify xml to be added to the selected node, and are also able to execute script across the selected items.

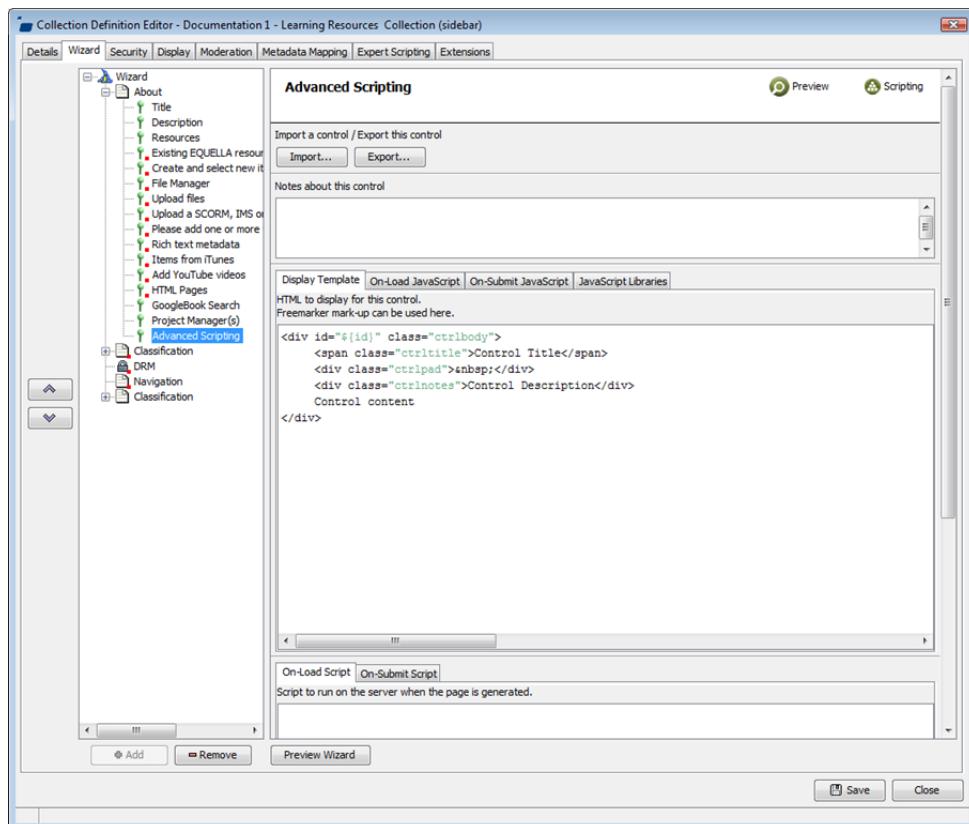
## Embedded metadata extraction

The functionality for embedded metadata extraction supports standards that provide information often embedded in photographs, such as the time taken, location, aperture used and other details. This feature allows users to import and display this metadata as well as custom tagging in image files from cameras and phones for storing and managing bulk images.

The inclusion of IPTC, Exif and XMP metadata standards associated with image and audio files imported into EQUELLA enables the user to include the metadata with the content when uploading via expert scripting.

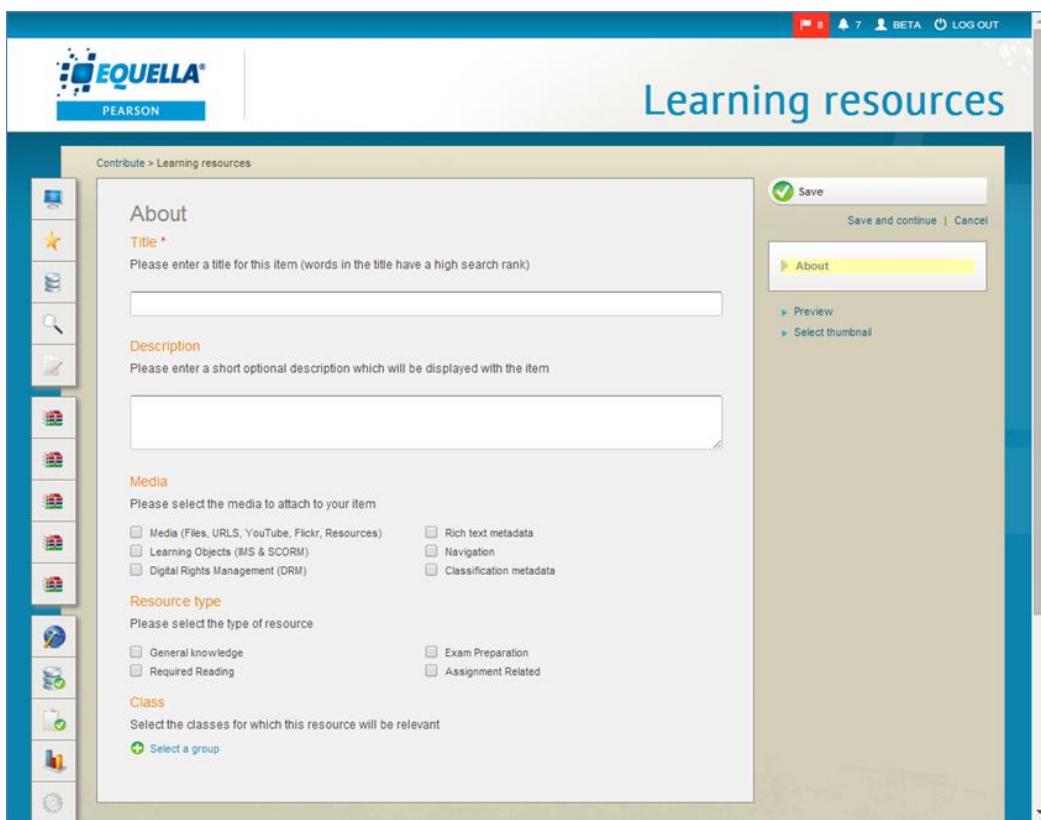
## Contribution wizards

The contribution wizard is highly flexible and scriptable, allowing wizard controls to change according to the type of user; the position of the item in the moderation process; or according to metadata values already provided within the contribution process. The configuration, appearance and sequence of wizard pages can all be customised. During the creation of the contribution wizard, all controls and pages can be previewed in the Administration Console.



**Figure 4 The Collection Definition Editor wizard**

In EQUELLA, collections are logically categorised and presented in a two-level tree structure. Users select the appropriate collection for the type of item that is to be contributed. This automatically generates the relevant contribution wizard.



**Figure 5 An EQUELLA contribution wizard**

The contribution wizard prompts contributors for metadata relevant to the items being contributed to EQUELLA.

In addition to collecting metadata information, a contribution wizard allows users to:

- upload individual, multiple and zip files;
- import IMS, METS and SCORM packages;
- add YouTube™, iTunes™ U and Google books™ content;
- search and retrieve taxonomy terms stored in EQUELLA or a separate SQL data source;
- select existing user and associated email addresses;
- organise uploaded content with a navigation tree;
- add URL links; and
- create HTML pages.

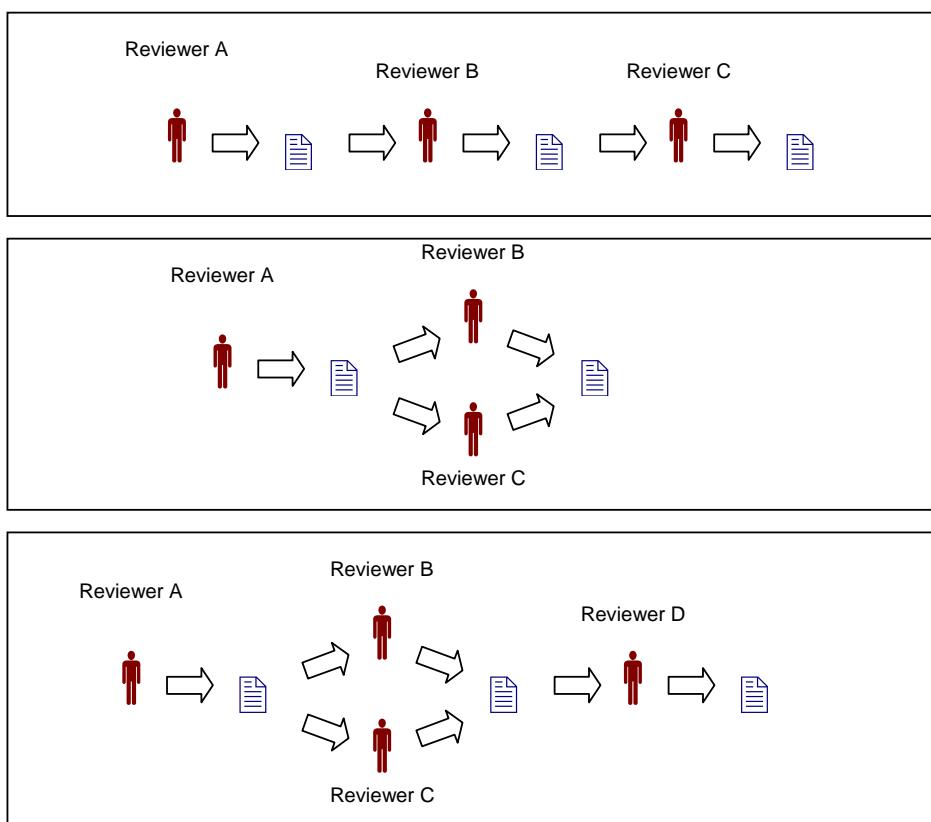
The user's view of a contribution wizard will vary depending on the type of controls used, the metadata values entered, an item's position in the workflow and the system role of the contributor.

## Taxonomies

EQUELLA supports longer and additional hierarchical terms in taxonomies. Users have the ability to build taxonomies that actively align with their custom contributions. By enabling higher amounts of specific data to be selected by a user during contribution, EQUELLA presents users with the opportunity to build taxonomies that actively align with their custom contributions.

## Moderation workflows

EQUELLA supports powerful and flexible review and moderation workflows that allow an administrator to restrict the publication of an item until it has passed through the workflow. Workflows are associated with a collection and can be a simple one-step or complex multi-step editorial and technical review.



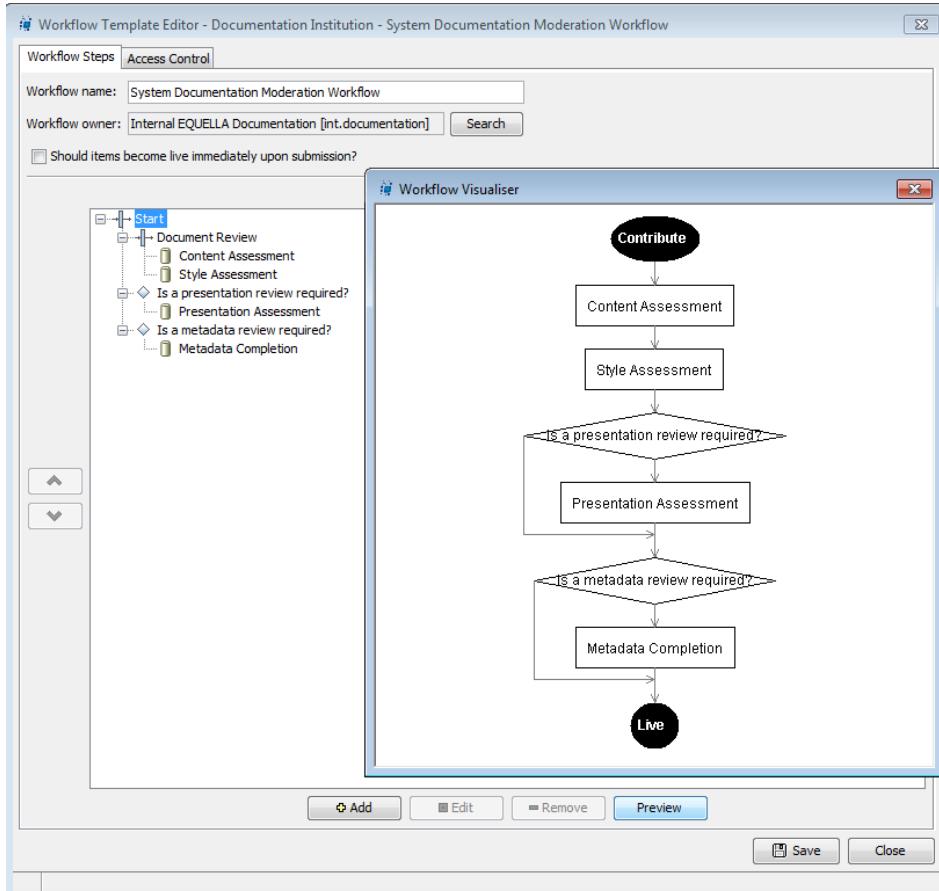
**Figure 6 Sample workflow options within EQUELLA**

Items enter the workflow when they are contributed or published to the repository. Moderation may involve reviewing the item, reviewing previous versions of the item, supplying additional expert metadata and ultimately accepting or rejecting the item for inclusion in the repository.

An individual workflow can have multiple steps requiring contributed items be reviewed by groups of different individuals at different levels within an organisation.

Workflow steps can be scripted allowing for conditional, branched workflows. An administrator can define rules that allow moderators to view items based on user type and/or metadata supplied during the contribution process.

Workflow within EQUELLA is defined using a workflow template that comprises a series of steps, each associated with one or more moderators. A workflow template can be applied to any number of collections.



**Figure 7 Workflow Template Editor with workflow nodes and diagram**

Configurable properties define the options associated within a workflow step. These include:

- requirement for unanimous acceptance (in the case of more than one moderator);
- escalation periods;
- ability to auto-assign; and
- locking fields that control item editing during the moderation process (required for metadata enhancement).

Complex branched workflows can be created by associating each workflow step with a script constructed within EQUELLA's Script Editor.

Items can be selected to 'go live' (be available to users of the repository) at any point of the workflow while still allowing the workflow to continue. This flexibility allows an administrator to ensure that selected documents can be made available to users quickly.

without sacrificing review steps. This is particularly useful when the workflow is used to undertake optional metadata enhancement.

## Notifications and task list

EQUELLA uses a series of proactive notification strategies within a workflow. A Tasks portlet can be conveniently displayed on the EQUELLA Dashboard page to notify users of the number of outstanding items requiring review or moderation and when new items are published or have been rejected.



**Figure 8 A Tasks portlet notifying the user of tasks to perform**

Moderators have the ability to search and sort the Tasks list results and filter by collection, owner and assignment type.

Rejected items have the moderator's reasons attached and notification is sent to the original contributor. The contributor can reject or modify the item and resubmit.

Additionally, email notifications are received by a designated user or group if a moderation task is not completed within a set period.

Moderators have the ability to search and sort the Tasks list results and filter by collection, owner and assignment type. Workflows in EQUELLA establish a quality assurance process for content that ensures its value to users. The repository has introduced new enhancements designed to improve the usability of existing functionality, including:

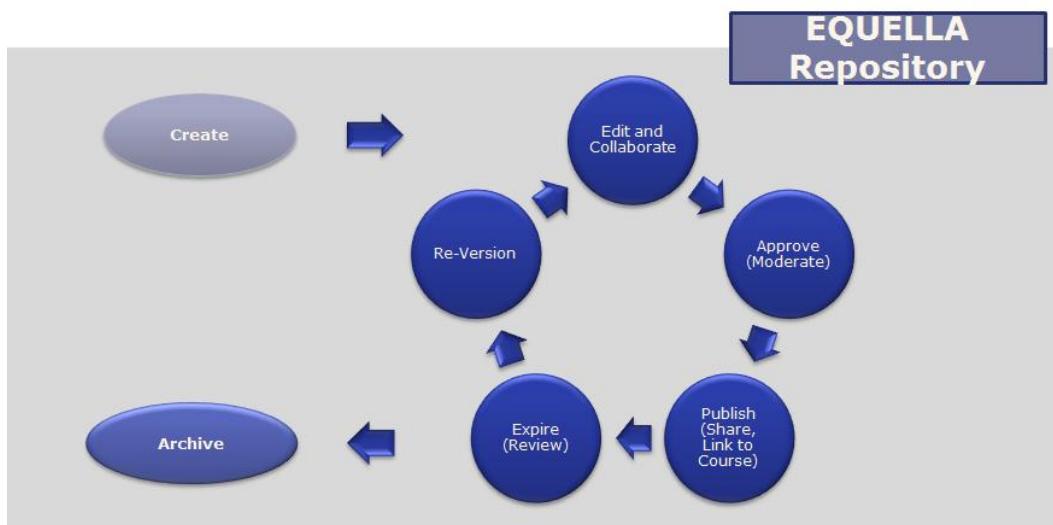
- Notifications via RSS and Email
- Task commenting
- Manual escalation dates
- Task management

To create a new workflow template, the user will access the Workflow Task Editor, combining existing functionality and new features onto the Details page, while the Moderators page has remained untouched.

## Item version control

The EQUELLA allows an item to have multiple, associated versions; enabling items currently in use to be modified and reviewed without impacting on their use. This provides the educator with the ability to review the new version before including it in their course or enables a creator to update their version of the item after it has been added to the repository.

EQUELLA manages multiple versions of an item and during its life within the repository, an item can go through a variety of states.



**Figure 9 Item lifecycle**

During the workflow a moderator can optionally review all previous versions of an item.

The screenshot shows the 'Versions' page in the EQUELLA interface. The top navigation bar includes links for 'INT DOCUMENTATION | PROFILE | LOG OUT'. The main content area is titled 'Versions' and displays a table of 'Versions of this item'. The table has columns for 'Version', 'Title', and 'Status'. The data is as follows:

Version	Title	Status
3	EQUELLA Certification Program Overview	moderating
2	EQUELLA Certification Program Overview	live
1	EQUELLA Certification Program Overview	archived

On the right side of the page, there is a sidebar with 'Actions' including: Add to favourites, Share with others, Add to hierarchy, Edit this version, Create a new version, Redraft this version, New contribution of same type, Clone item into a collection, Move item into another collection, Suspend this version, Delete this version, Change ownership, and Export.

**Figure 10 Displaying all versions of an item**

Versions can also be suspended, rendering them inaccessible to users; this is useful when the original content of the item is incorrect, out of date or misleading.

## Search, browse and bookmark

EQUELLA provides powerful inbuilt search and discovery features. Educators can discover existing items and resources via a browse or search interface, while customised advanced searches allow for searching based on metadata.

Search results can be shared, added as course content and used to create items.

EQUELLA search types include:

- Keyword and collection
- Hierarchical browsing
- Advanced (advanced metadata)
- Remote repositories (external)

Users can also search for their content through:

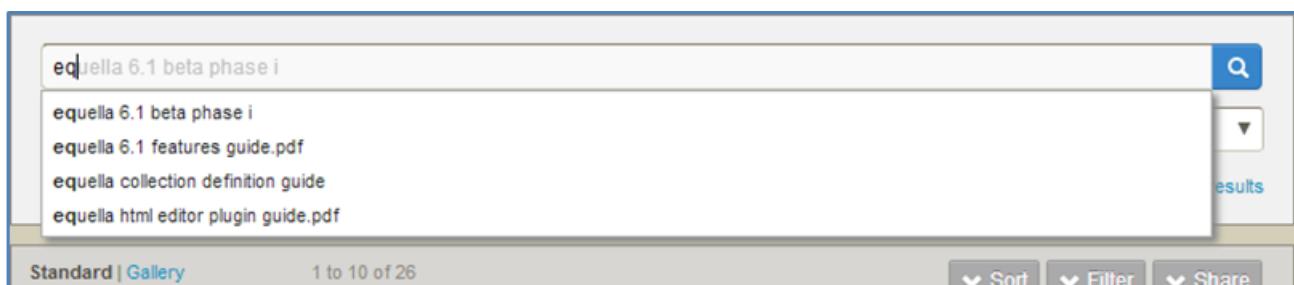
- Favourites
- My resources
- Tasks

### Keyword and collection searches

The search interface provides simple access to collection-specific, advanced or remote repository searches. Auto completion search functionality allows each user to complete a search that is quicker, more intuitive, and efficient. This simplifies the process of searching, which enables new users to quickly discover content using the search portal. The more inclusive search results present users with different choices when searching; including some they may not have originally anticipated. Additional intelligence that has been built into the searches, for example, word stem recognition identifies variants of words and returns additional results for the alternate wording.

EQUELLA's searching capabilities enable the user to tailor properties of the EQUELLA search, including the boost value (or importance) of the title, metadata or attachment. Each can be specified, which affects the relevance score and therefore the results when a user enters a search term.

The ability to configure boosting factors to allow for the content title, metadata and attachment content to be adjusted aims to strengthen the search and discovery of the content. If, for example, the content is not being searched at all, the configuration of boosting factors can make the content 8 times more relevant.



**Figure 11 Auto complete search functionality**

The screenshot shows the EQUELLA search interface. The left sidebar includes links for Dashboard, Favourites, My resources, Search (which is selected), Contribute, Browse resources by format..., Training documentation, Teaching resources, Administration documentation, More..., Manage external resources, and Manage resources. The main search bar contains the term 'cook'. Below it, a dropdown menu allows searching 'Within all resources' or 'Within my collections'. A search result for 'Cooking with gas' is shown, with a thumbnail of Jamie Oliver cooking. Another result for 'Jamie Oliver cooks with ducks.' is also listed. The interface includes standard search controls like Sort, Filter, and Share.

**Figure 12 Word stem recognition provides additional search results**

Users can search for items from all collections or restrict their searches to a selected collection. While search queries can contain optional Boolean logic to target keywords associated with items.

The screenshot shows the EQUELLA search results page. The left sidebar has the 'Search' link highlighted. The search bar at the top contains the term 'Enter search terms...'. Below it, a dropdown menu allows searching 'Within all resources' or 'Within my collections'. A 'Cloud search' button is also present. The search results are displayed in a 'Standard | Gallery' view, showing 1 to 10 of 110 results. The results include 'Physiology and Pathology' (status: Live, last updated 14 August 2014, 2:29 PM), 'Physiology 101' (status: Live, last updated 14 August 2014, 2:27 PM), 'Physiology - images' (status: Live, last updated 13 August 2014, 2:42 PM), and 'Introduction to EQUELLA' (status: Live, last updated 13 August 2014, 2:42 PM). Each result includes a thumbnail image and a brief description. The interface includes standard search controls like Sort, Filter, and Share.

**Figure 13 Search results page**

From within search results, a user can: find all discoverable items matching the search criteria; sort results by date modified, relevance, title or rating; or filter results by owner, date, or attachment type. Search results can be saved to the users Favourites list for future use and shared with other EQUELLA users.

The information displayed in search results can be customised for each collection.

Any results page in EQUELLA, where a search term has been entered, will display a Relevance score for each result, to indicate the most relevant and useful content. If the search terms, e.g. keywords have been located in the content attachments, a notification displays beside the relevance score to indicate this additional connection to relevance.

Additionally, toggling the attachment search option allows individual users to set whether they wish attachments to be searched when they are entering the search terms. This will display in a search attachments checkbox, and can be accessed directly from the Search page.

Further search capabilities enable users to; utilise the immediate display of the search suggestion summary page once selected, default the Show attachments icon to open or closed, sort by creation date and access Videos view (please see [Gallery view](#) on page 49).

## Advanced search

Advanced searches are customised searches specified by the administrator that can traverse multiple collections as they are based on specific metadata fields. The fields displayed will vary depending on the configuration. It makes searching for particular items easier and can be targeted to specific users, groups or roles.

The screenshot shows the 'Learning resources advanced search' interface. At the top is a search bar with placeholder text 'Enter search terms...' and a magnifying glass icon. Below it is a dropdown menu set to 'Learning resources advanced search'. The search form is divided into sections: 'Format of resource' (with checkboxes for Audio, Video, Image, Document, and Other), 'Aggregation level' (with checkboxes for Level 1 through Level 4), 'Learning resource type' (with checkboxes for various types like Diagram, Figure, Lab demonstration, Problem statement, Simulation, etc.), and a footer with 'Search' and 'Cloud search' buttons.

Enter search terms...

Learning resources advanced search ▾

**Format of resource**

Audio  Video  Image  
 Document  Other

**Aggregation level**

Level 1 - Smallest level of aggregation, e.g. raw media data or fragments  
 Level 2 - Collection of level 1 resources, e.g. an HTML document with some embedded pictures or a lesson  
 Level 3 - Collection of level 2 resources, e.g. a 'web' of HTML documents, with an index page or a unit  
 Level 4 - Largest level of granularity, e.g. a course.

**Learning resource type**  
Please select one or more types

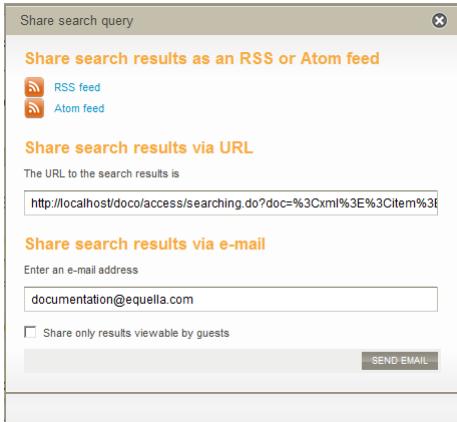
Diagram  Exam  Exercise  
 Figure  Graph  Index  
 Lab demonstration  Lecture  Narrative text  
 Problem statement  Questionnaire  Self assessment  
 Simulation  Slide  Table  
 Diagram  Exam  Exercise  
 Figure  Graph  Index  
 Lab demonstration  Lecture  Narrative text  
 Problem statement  Questionnaire

Add search to favourites

**Figure 14 Advanced search page**

## Save and share search results

EQUELLA's keyword, collection and advanced searches support sharing search results with others. Search results can be shared as an RSS feed, Atom feed, via email and URL.



**Figure 15 Share search results page**

Search results can also be saved for future use.



**Figure 16 Save search results page**

## Hierarchy browsing

In addition to searching, EQUELLA allows the administrator to define and control access to a hierarchy of logically-grouped resources, including distributed management of hierarchy subsections to multiple administrators.



**Figure 17 Browsing view**

Hierarchical browsing allows users to discover items placed within EQUELLA based upon category. Users can 'drill down' into topics and their subfolders and search within the results. EQUELLA can be configured to provide a count of subtopics and results and allow contributors to add their most important items to a hierarchy topic.

## Dynamic Hierarchies

Dynamic hierarchies allow administrators to create an environment where users can browse through categories to target their searches. Hierarchies within the repository now have the ability to be dynamic in nature. When configuring a new Virtual Topic a metadata node can be selected to return either: all contributed resources with a value for the given field, or resources from a manually-created list. The dynamic nature of this feature ensures that newly contributed content is populated within a hierarchy.

Hierarchy topics can be dynamically created from a set of key learning areas using the Virtual Topics feature. When relevant items are contributed, a value would need to be entered, which then automatically displays the relevant hierarchy topic upon submission.

Key resources can be added to and removed from dynamic and static hierarchies from the hierarchy topic/subtopic results page, the search results page and the resource summary page. The adding and removing of key resource from hierarchies is easy to manage, ensuring this functionality is user friendly.

## Bookmarking

EQUELLA provides a bookmarking feature called Favourites. It allows users to add items they have found to their personal list of favourites. Additionally they can save the results of central searches. Users can sort, filter and manage these items and searches.

The screenshot shows the EQUELLA Dashboard. On the left, there is a sidebar with various links: Dashboard, Favourites (which is highlighted with a red box), My resources, Search, Contribute, Browse resources by format..., Training documentation, Teaching resources, Administration documentation, More..., Manage external resources, Manage resources, Manage activations, and Reports. Below this is a 'Quick search' bar. The main content area is titled 'Dashboard' and contains several sections: 'My Favourites' (with a red box around it) containing items like 'Search results for "Physiology resources"', 'Search results for "Physiology"', 'Introduction to EQUELLA', 'Famous authors', and 'Fundamental mathematics'; 'Tasks' (with a red box around it) containing 'All Tasks (3)' with sub-options for 'Tasks assigned to me (1)', 'Tasks assigned to others (1)', 'Unassigned tasks (1)', and 'Must moderate (0)'; and a 'Welcome to EQUELLA' section with instructions for 'SCREEN OPTIONS' and 'HELP'.

**Figure 18 Favourites page**

Favourites page features include:

- **Resources** page where users can view individual favourite items.
- **Searches** page where users can easily review the results lists from saved searches.

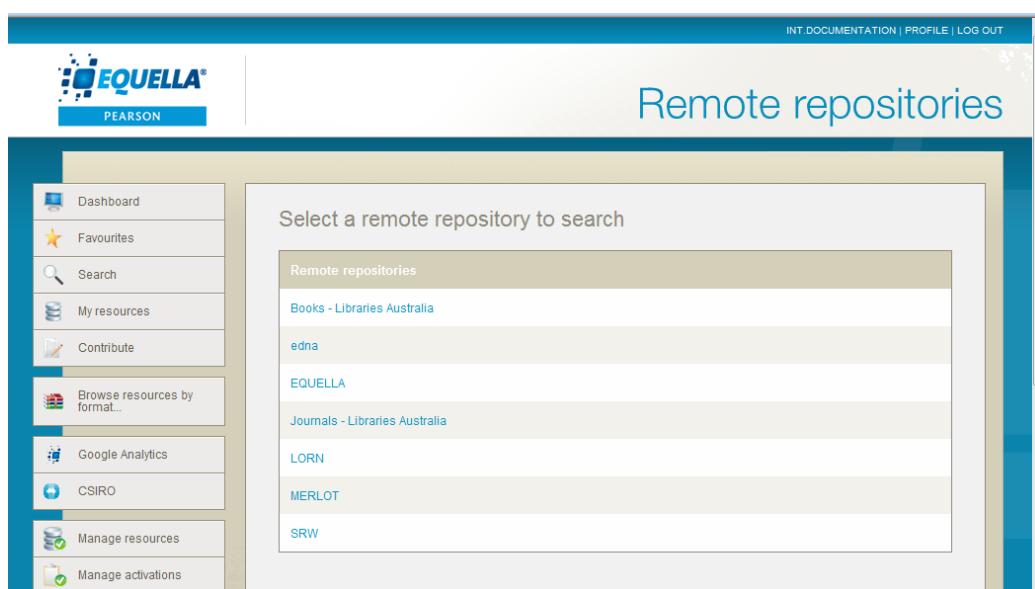
## Remote repository search

A remote repository search allows users to search multiple external sources, including other EQUELLA repositories, for content using a single search query. Depending on how a search has been configured by the administrator, search sources can include such entities as university library databases, Internet search engines and online course management systems.

Supported search sources include:

- Z39.50—libraries and major databases.
- SRW—internet pages.
- SRU—Search/retrieval via URL.
- MERLOT—higher education learning materials.
- The Learning Federation — National Digital Learning — Resources network.
- EQUELLA—other EQUELLA repositories.

Other sources can be added, based on a specific institution's needs.



**Figure 19 Remote repository search page**

A feature of remote repository searches is that the search result metadata (information) can automatically be added to a collection contribution wizard. This increases accuracy and saves time entering the data manually.

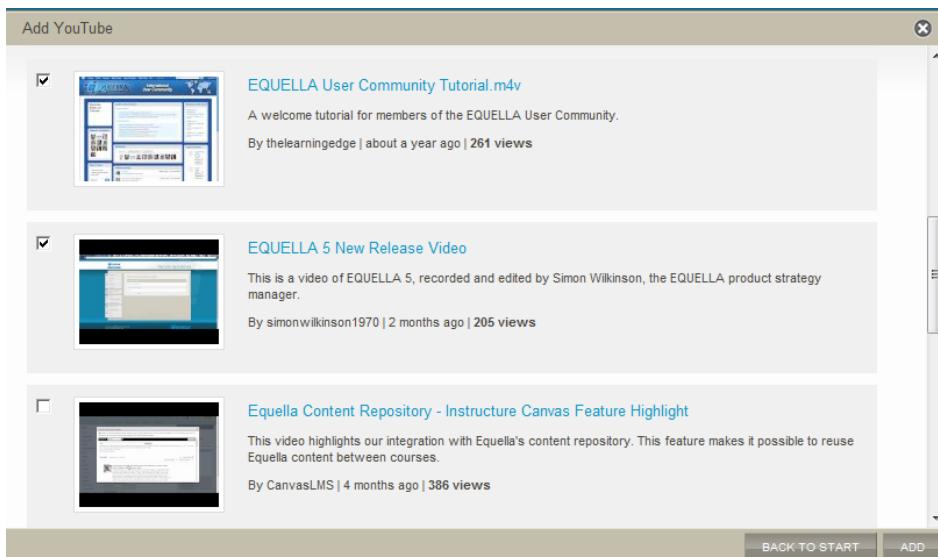
## Discoverability

Discoverability (Search Engine Optimisation) in EQUELLA strengthens the visibility of webpages within search engines. Via scripting, this feature provides the user with the ability to add meta tags that improve the way Google, and other search engines can index the resources. To develop collections, including teaching and learning, and research, which are well formed and meet the Google requirements for high quality

search rankings, the repository will index each item and find the appropriate meta tags. For research collections, Google Scholar has particular inclusion guidelines, which can be applied to the content within the repository to produce the best results for discoverability.

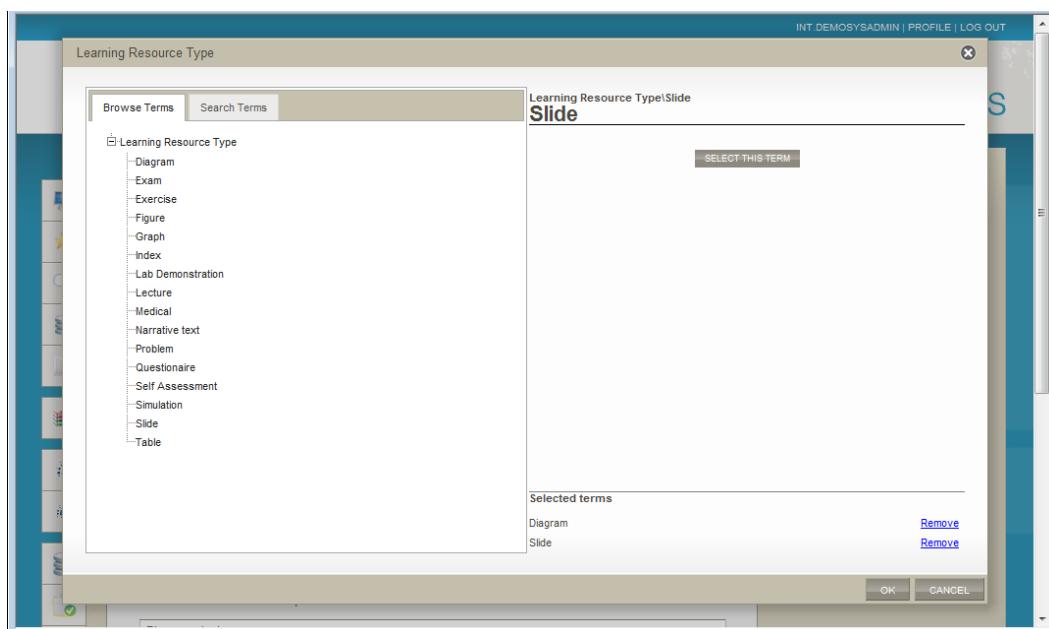
## Other searching features

YouTube™ content, iTunes™ U items and Google™ Books resources can be included in item content.



**Figure 20 Content from YouTube**

Users can browse and search taxonomies to help them classify content.



**Figure 21 Taxonomy term selection**

## Personal content

EQUELLA provides a special area for users to easily create and store personal content. Users can add resources to their Scrapbook by uploading files or creating new web pages. These resources can be searched, tagged and managed without worrying about metadata and workflows.

The Scrapbook can be used in a variety of ways, for example, as a staging area for storing and preparing resources for later use in a published work.

The screenshot shows the EQUELLA Scrapbook interface. On the left is a sidebar with icons for Dashboard, Favourites, Search, My resources (which is selected), Contribute, Browse resources by format..., Google Analytics, CSIRO, Tasks, Manage resources, and Manage activations. The main area has a title 'My resources' with navigation links: Published, Drafts, Scrapbook, Moderation queue, Archive, and All resources. Below this is a 'Results' section titled 'EQUELLA Resources'. It shows one item: 'EQUELLA - Pearson Logo'. The item details are: Status: Last updated: less than a minute ago; Web Pages: For Teachers | For Students; Tags: graphic, marketing. There are 'EDIT' and 'DELETE' buttons next to the item.

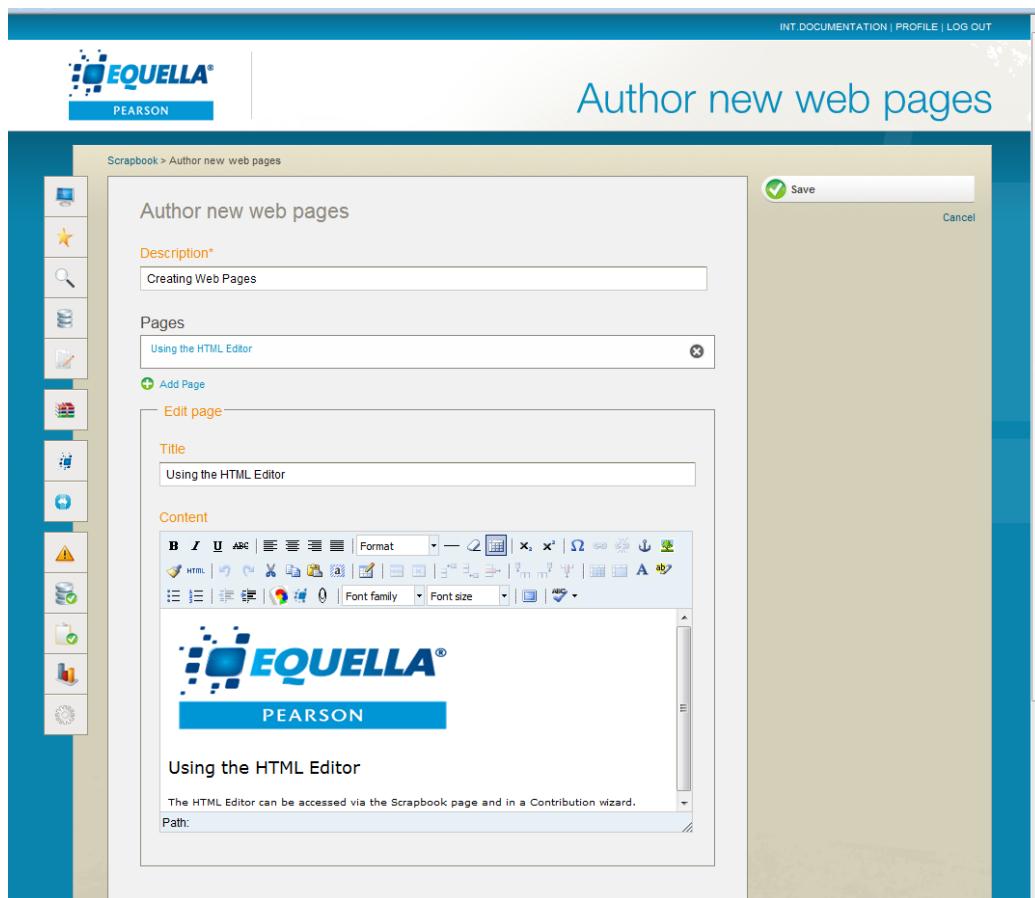
**Figure 22 Scrapbook page**

Scrapbook features include:

- fast and easy uploading and creation of resources;
- naming and tagging of personal resources;
- simple searching, viewing and managing of content; and
- flexible storage quotas enabling varying models for content authors, instructors, students and other users.

## Create HTML pages

The HTML Editor enables the user to create, load and edit a series of HTML pages concurrently. This web-based tool is delivered via a familiar WYSIWYG interface and provides numerous operations, and tooltips to enable the selection of repository content.



**Figure 23 The HTML editor**

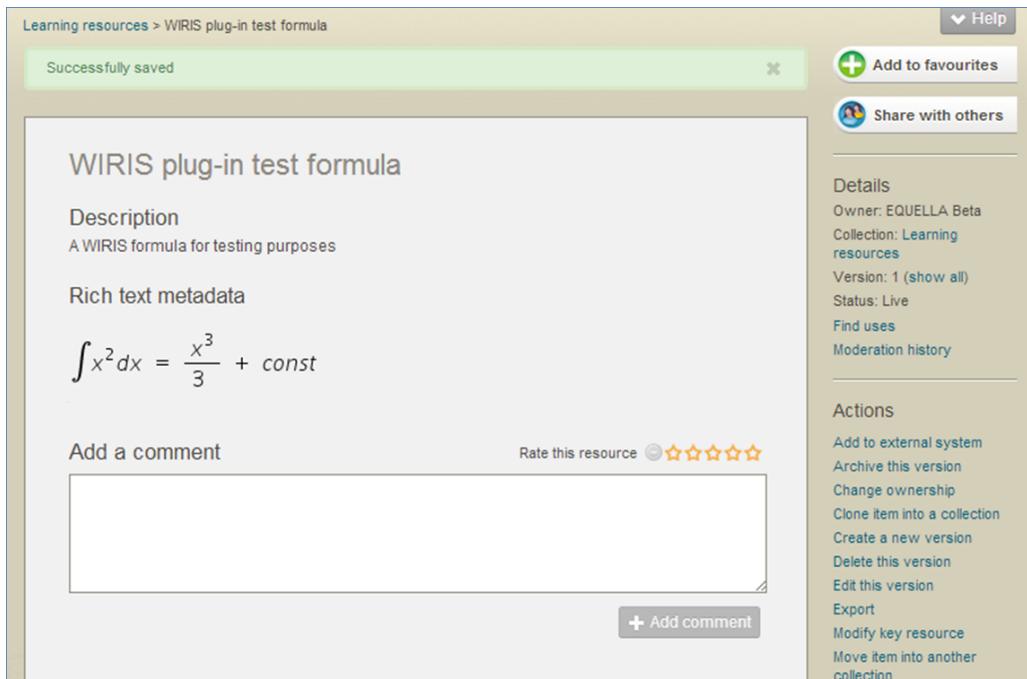
Users can either use the HTML editor to produce static web pages to be stored in their Scrapbook area or quickly create dynamic web page content when they are contributing an item.

## HTML editor plug-in framework

The HTML editor plug-in framework enables third-party plug-ins to be uploaded and used in the EQUELLA HTML editor, improving the internal authoring capabilities of EQUELLA. Equation editors and graphing functionality for expanded mathematical representation can be added to the HTML editor, and with further customisation users will have the ability to track changes in the HTML editor and also utilise auto-text capabilities.

The plug-in framework has been tested and certified with the following plug-ins:

- WIRIS – Mathematical formula editor
- ICE – Change tracker
- After the deadline – Spelling, grammar and style checker



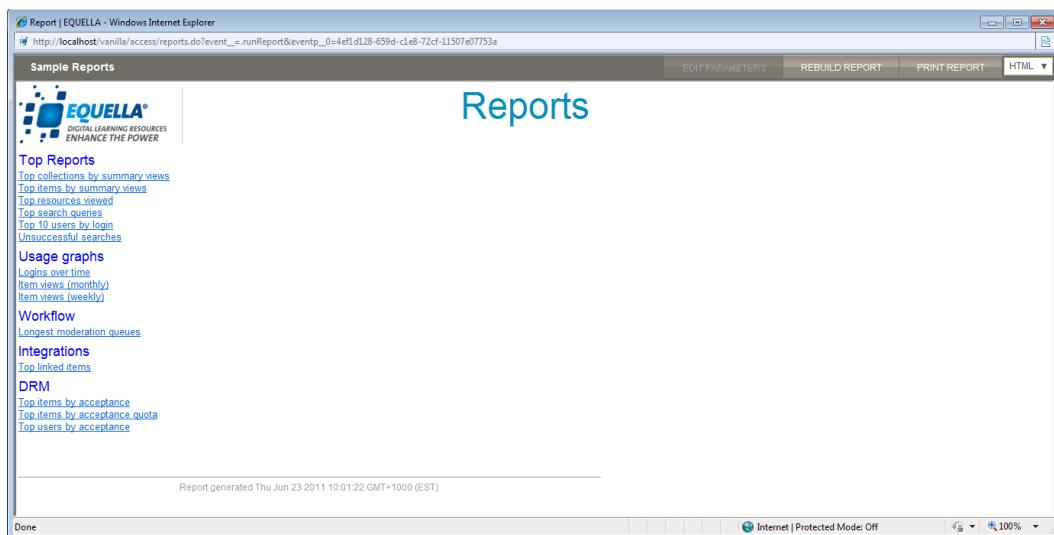
**Figure 24 WIRIS – Mathematical formula editor**

## Reports

EQUELLA uses BIRT (Business Intelligence and Reporting Tools), a flexible custom-reporting engine that allows administrators to design and execute custom reports. Any information included on an installation's database can be reported on using BIRT. Reports can include:

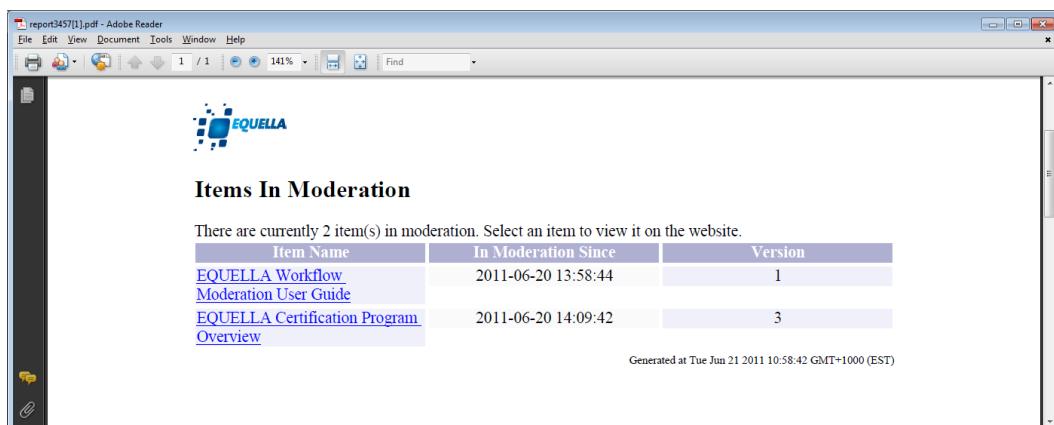
- all items in moderation or items in workflow for more than two weeks;
- items rejected or bad URLs;
- weekly usage (times of logins grouped by user); and
- copyright compliance.

Reports are generated by inputting the installation's data source and then designing reports to query the data source. The report designer uses standard SQL queries and supports all reporting parameter controls and data types allowing user-supplied values to be gathered and used.



**Figure 25 Sample reports**

Reports can be generated in HTML, PDF or Excel format and they can be printed.



Item Name	In Moderation Since	Version
EQUELLA Workflow	2011-06-20 13:58:44	1
Moderation User Guide		
EQUELLA Certification Program Overview	2011-06-20 14:09:42	3

Generated at Tue Jun 21 2011 10:58:42 GMT+1000 (EST)

**Figure 26 PDF generated report**

To assist report writers creating reports against the EQUELLA database, an interactive EQUELLA database map is available and reports can also be produced in MS Word format.

The EQUELLA database map assists users who create reports to navigate and understand the EQUELLA database structure. This interactive map provides a snapshot of the EQUELLA database, and information about its tables and table relationships, constraints, anomalies, columns and other details.

## Assessment

EQUELLA supports IMS Question and Test Interoperability specification (QTI) version 2.1. This allows for the contribution of QTI packages to the EQUELLA repository as resources for viewing. The resource is uploaded in the same way as an IMS or SCORM package. The contributed package can then be viewed exactly as other resources are viewed and will play via the default EQUELLA quiz player.

QTI assessment support also enables users to manage and share assessments in EQUELLA, deliver them through a variety of LMSes and record the student's progress in the LMS Gradebook. Users can discover, play and interact with QTI assessment objects in EQUELLA. Once the questions that conform to the QTI assessment standard are developed in EQUELLA, the QTI test is then published inside the LMS. When the quiz is played, a score accumulates, and each time a user logs in, the quiz will restart.

QTI Quiz Example - Science

Submit test

Section 1

Question 1

Question 2

Question 3

Question 4

Question 5

Question 6

Question 7

Question 8

Question 9

Question 10

Question 1

Which of these is least important for a successful career in science and technology?

A creative imagination

A solid knowledge base

The ability to work with others

Personal wealth

Prev Next

**Figure 27 QTI Quiz in EQUELLA**

## Resource management

Within EQUELLA content can be managed by various users such as the system administrator, item owner or collaborator. Typically the owner has the ability to modify, create new versions and share ownership of their contributed items, while the system administrator has overall control to manage items regardless of ownership, status or collection.

The screenshot shows the EQUELLA interface with the title 'Manage resources' at the top right. On the left is a vertical sidebar with various navigation options. The 'Manage resources' option is highlighted with a red box. The main content area displays a search bar, a results table showing 1 to 10 of 141 items, and a selection panel. Below the table are four resource cards: 'Physiology 101', 'Rain forest creek - Hogarth Falls', 'Health check tool', and 'Dogs'. Each card includes a thumbnail, a brief description, and a 'Select' button.

**Figure 28 Manage resources page**

## In-place content editing

The ability to edit resource attachments 'on-the-fly' removes the need to download and upload documents for editing. Resource attachments now have additional capabilities that provide a different range of options for editing, including the ability to save the updated document and allow the user to either upload or ignore the changes. The user may treat the document as a normal EQUELLA file upload, completing actions, including entering the description and tag details. All action results will be displayed in the results saved in the Scrapbook.

# The EQUELLA Content Exchange

The EQUELLA Content Exchange enables resources to be sold outright, by subscription or provided free of charge from a Store set up on an EQUELLA system to other systems set up as EQUELLA Store fronts.

EQUELLA instances set up as Stores make content available for purchase to registered EQUELLA store fronts via Store catalogues. Catalogues are created and resources are priced (based on a number of available pricing models) and allocated to relevant catalogues. Catalogues can be restricted by regions, and sales taxes can be applied per Store front registration. The catalogues are then browsed at an EQUELLA Store front, and users can select and purchase desired content.

An EQUELLA system can be configured as a Store front for the purpose of registering with EQUELLA Stores to access available catalogues and purchase content. Content can be added to a shopping cart and paid for using a payment gateway. Basic workflow rules can be implemented to allow for different users to create, approve and pay for orders.

Once a resource is paid for, it is harvested from the Store to the Store front and added to a predefined collection. The resource is available for use for the duration purchased (subscriptions) or indefinitely (outright purchases or free).

The screenshot shows the EQUELLA Resource Shop interface. At the top right, there are links for 'INT.DEMOSYSADMIN | PROFILE | LOG OUT'. Below this, the title 'View catalogue' is displayed. On the left, a sidebar menu includes: Dashboard, Favourites, My resources, Search, Contribute, Shop, Browse resources by format..., Research repository resources, EQUELLA documents, Teaching Resources, Copyright Activations, Administration Console, Google Analytics, My tasks (with 4 notifications), Notifications (with 9 notifications), Manage tasks, and Manage external resources. The main content area shows a 'Return to store' link and the 'EQUELLA Resource Shop' logo. A 'Literature' category is selected, described as 'Hundreds of spelling quizzes, short stories and comprehension resources. All levels.' A search bar is present. To the right, there's a 'Shopping cart' section stating 'There are no items in your shopping cart', a 'Sort' button, and a 'Filter' section with dropdown menus for 'Filter by date modified' (set to 'After') and 'Filter by pricing model' (set to 'Any'). The 'Results' section displays three items: 'Joseph Conrad - Heart of Darkness' (last updated 3 minutes ago, outright purchase price \$25.00 AUD, subscription price \$0.99 AUD / Week), 'The works of Emily Bronte' (last updated 6 minutes ago, outright purchase price \$30.00 AUD, subscription price \$1.99 AUD / Week), and 'The life and times of Jane Austen' (last updated 8 minutes ago, outright purchase price \$25.00 AUD, subscription price \$0.99 AUD / Week). Each item has a small thumbnail image and a brief description.

**Figure 29 Store Catalogue Resources**

# Mobile app

Users can access EQUELLA via mobile apps for iPad and Android tablets. The app enables users to view resources owned by the logged in user, as well as notifications and tasks.



**Figure 30 My Resources Page**

## Integrated applications

EQUELLA provides seamless integration with a variety of third-party systems, assisting institutions to maintain a centralised approach in the creation, management and delivery of online learning activities.

EQUELLA can be simultaneously integrated with several different systems, so that a single EQUELLA resource can be accessed by users using different integrated applications across multiple campuses at the same time.

EQUELLA allows integrated systems to login by generating and passing a single sign-on token. Administrators can apply sophisticated security rules based on the shared secret used.

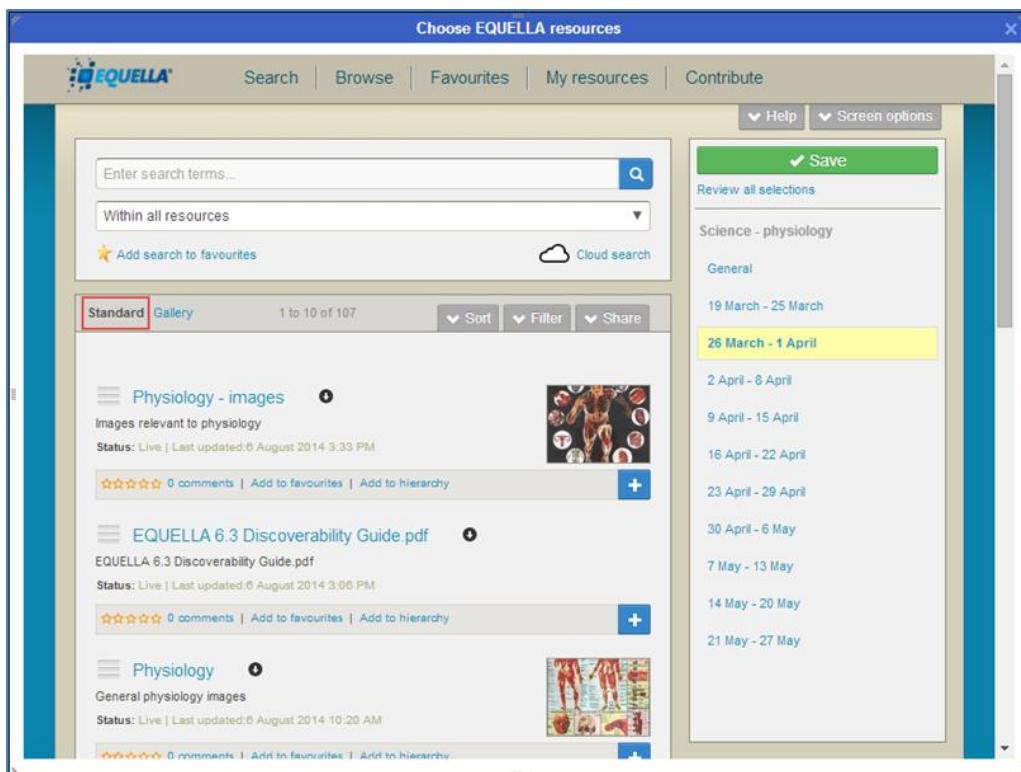
Currently EQUELLA has developed integrations with:

- Moodle™ V2.9 (via a set of Moodle Modules);
- Blackboard Building Block—that works with Blackboard Learn v9.1. SP14;
- Canvas™ latest version;
- Desire2Learn latest version; and

- Additional integrations can be provided upon request, including: Pearson LearningStudio; and Fronter.

EQUELLA includes a streamlined standard integration screen which reduces the number of clicks, incorporates drag-and-drop capabilities and Push to LMS functionality. Other key elements include Save and Share Search functionality, allowing selection of attachments, as well as access to the Actions menu from the Resource summary page.

This integration experience is available across all major LMSes that have current integrations with EQUELLA.



**Figure 31 Streamlined standard integration screen (accessed from integrated Moodle with Push to LMS)**

## Push to LMS

Users can choose to either contribute EQUELLA content to a course within the LMS, or can directly contribute resources into a Moodle, Blackboard Learn or Canvas course without having to separately access the LMS. This enables users to push content to a course (or multiple courses) directly from EQUELLA.

Any updates to EQUELLA content from within the LMS are automatically synchronised and reflected in EQUELLA.

This functionality also allows administrators and users to discover which EQUELLA content is being used in specific courses.

The integration screen allows users with Push to LMS functionality to drag and drop resources to any section of their LMS, while those without Push to LMS can drag and drop files to the section of the LMS from which they accessed the integration screen.

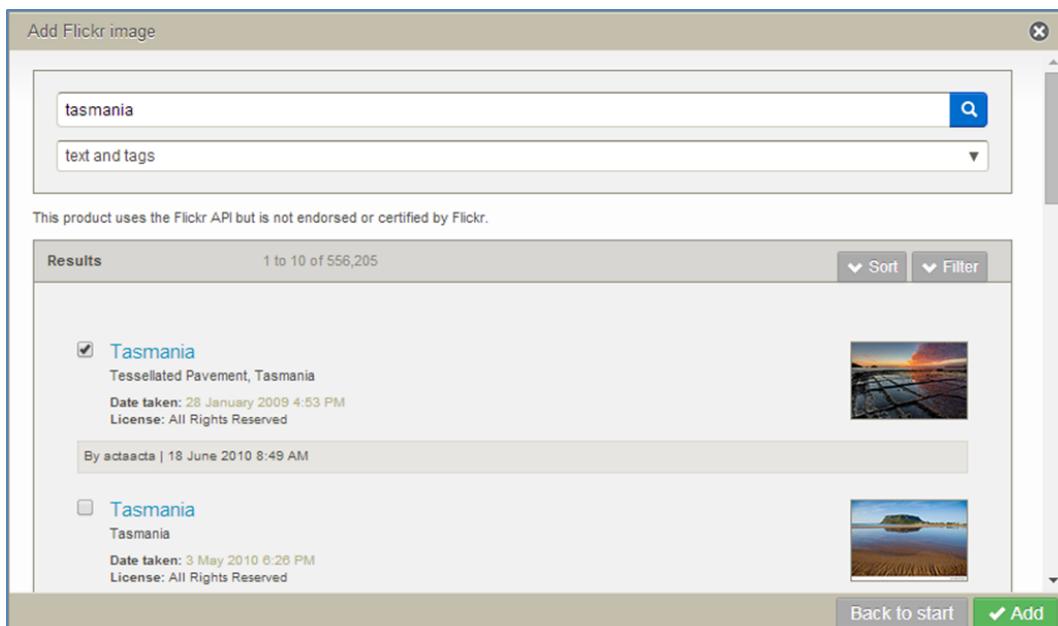
EQUELLA's push to LMS capabilities provide users with greater flexibility for course sorting and filtering. Users can actively sort by date, name, or course and also edit the information tagged to an individual item as part of the process of pushing the content to the LMS.

This feature has the ability to push content to courses that are not currently live, manage external resources, and update items in bulk. The user interface enables effective management of content pushed to the LMS, including summary reports. The reports can be generated, and may include the course ID, teacher's name, item name, file type and size, as well as when it was last accessed and the number of students who used the resource.

## Flickr Integration

Flickr has been added as an attachment type to attach to resources during contribution. Now along with YouTube videos and Google books, images from the Flickr repository are able to be incorporated into your contribution.

The user can search for images within Flickr, across a range of search elements including: over text and tags, filter by date photo taken, limit to any one of the Creative Commons Licences, Flickr Institutions, Flickr user's FlickrId, username or email. The search will return results that directly match the query and filter options, with the result including: name, selection checkbox, description, full image size, date taken, licence, author, and time since added. Any number of Flickr images may be selected by the user and, after being added, the image details can also be edited.



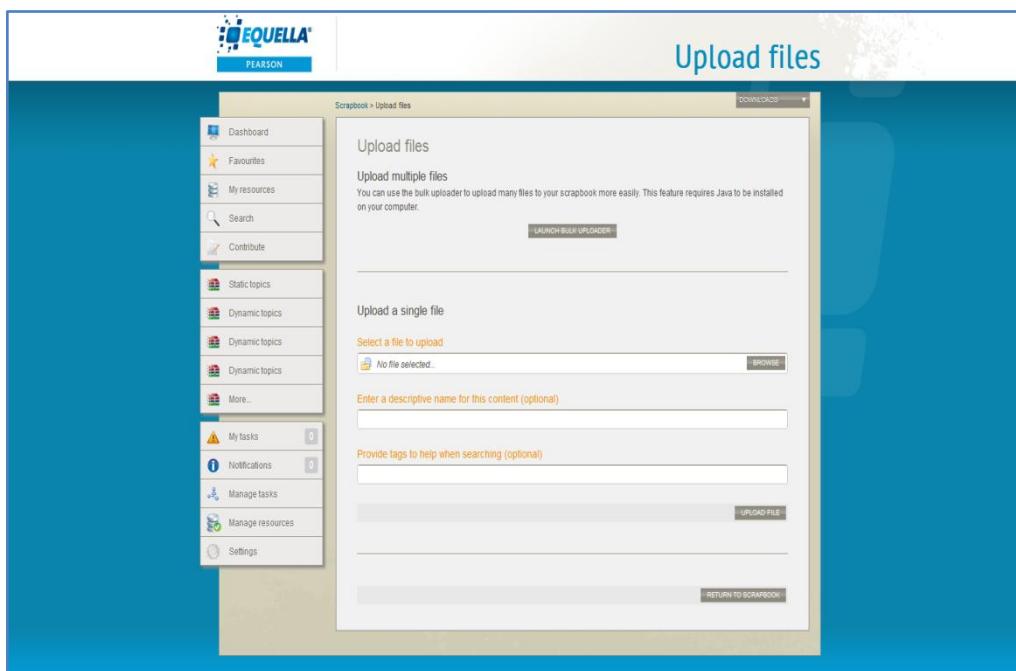
**Figure 32 Add a Flickr image as a resource**

## Microsoft Office Scrapbook Integration

The Microsoft Office Scrapbook integration enables users to publish content to EQUELLA from within Microsoft Office (Word, Excel, PPT), saving time on editing and uploading different content versions.

To develop the integration the user will first enter My resources and select the Scrapbook link, as this page lists all resources currently in your scrapbook, which can be uploaded. This allows the user to organise their commands for the tool to effectively configure the integration. An institution URL can then be added to tell Microsoft Office where to look for the user's scrapbook.

Using the login for the EQUELLA user for whose Scrapbook resources you wish to browse will produce a list of resources from the Microsoft Office program you are browsing. The results can be filtered by entering a new search term, and sorted by Last modified, Title or Relevance. Each resource can be uploaded, and edited before publishing. The updated resource can then be viewed by opening from either a web browser or from within the selected Microsoft program.



**Figure 33 Select a resource in your Scrapbook to upload**

## YouTube Channels

The YouTube integration provides institutions with the ability to restrict access to specific YouTube channels. This allows educators to develop a more tailored and relevant approach to YouTube that directly connects with course content and controls access to more subject appropriate YouTube videos for students.

Each YouTube channel can be developed to enable the user to configure their set channel options, by adding particular channels that are course appropriate. Media from a YouTube channel will be accessed via the collection that has been built with an enabled YouTube attachment type that includes all the required channels. Once the user selects YouTube

from the list of attachment types, the search page will display the channels the search will be within, and the user will be presented with a list of search query results relevant to their course content.

## ***Kaltura Media Streaming***

EQUELLA has the ability to integrate Kaltura streaming media, enabling Kaltura streaming media files to be linked to an EQUELLA resource during contribution. Video files can be uploaded to the Kaltura server, converted to streaming media then attached to the resource during contribution for playback through the repository or an integrated LMS.

The Kaltura integration also provides users with the ability to set up multiple Kaltura servers. The addition of local servers allows users to upload, link to, and stream both audio and video files. The integration also enables multiple instances of the same server to be created, which allows users to select different players for each instance. All users can also record via webcam and upload a selection to a Kaltura player during contribution.

## ***Rest Interface***

The inclusion of REST APIs in EQUELLA provides additional integration options for clients utilising external applications. This allows users to request a service call via a new request process, Web Services On Demand (WSOD), which enables each user with these privileges to extend remote access and interaction with EQUELLA. REST services are better utilised in specific technical environments so the inclusion of REST and the continued support of SOAP services will provide greater technical solutions for our client base integrating with EQUELLA.

The available REST services that EQUELLA supports includes service parity (SOAP – REST) and provide a migration path for institutions utilising SOAP specifications, copyright/activations, user experience and cloud.

EQUELLA's RESTful services have parity with existing SOAP APIs and cover the following functions:

- Retrieving and searching dynamic collections.
- Retrieving searchable or contributable collections.
- Copyright management.
- Task management.
- User management.
- Group management.
- Facet search / 'query counts'.

## Echo360 Integration

The EQUELLA and Echo360 integration enables an educator to use Echo360 to record and store a lecture, which is coded into different formats, and published into EQUELLA. EQUELLA has been configured to detect all Echo content, not only video files, which will enable the content information to be extracted from the system and tagged to the content.

Once populated into EQUELLA, the reference can be linked into the many LMSes and portals with which EQUELLA integrates, along with any other content available in EQUELLA. The application will then stream the media from Echo360.

The integration utilises EQUELLA's Push to LMS functionality, which allows users to publish content to a course directly from EQUELLA, with advanced usability and categorising of content, including greater flexibility for course sorting and filtering. The integration also extends Echoes with EQUELLA's commenting, rating and analytics, and will also enable users to publish comprehensive metadata for an Echo containing links to EchoCenter or EchoPlayer.

The screenshot shows the Echo360 item summary page for a presentation titled 'Extreme Weather - Sun Earth Energy'. The page includes a description section with capture details (Captured: 2014-04-16 07:37 -0400; Term: Spring 2014; Course: Equella Demo Course; Section: Section 1), a 'Links to resources' section with a thumbnail and a 'Full screen' link, a 'Add a comment' section with a text area and an 'Add comment anonymously' checkbox, and a detailed 'Details' sidebar on the right. The sidebar provides metadata such as Type: Echo Presentation, Name: Extreme Weather - Sun Earth Energy, Course name: Equella Demo Course, Section name: Section 1, Duration: 51 minutes & 59 seconds, Presenters: Perry Samson, Published: 26 days ago, and Captured: 6 months ago. It also lists actions like Add to favourites, Share with others, and various moderation and management options.

**Figure 34 Echo360 item summary page**

## LTI (Learning Tools Interoperability)

EQUELLA's LTI consumer and provider compliancy provides users with the ability to configure LTI tools and complete an LTI launch from inside EQUELLA and an associated third party tool. This also enables EQUELLA to interface with other external systems as an enhanced product that is LTI compliant.

The improvement of external integration support for additional tools, including LMSes, ePortfolio systems, attachment and content authoring tools is delivered through the standards based LTI integration. Users can embed any EQUELLA content into a compliant LTI consumer application, and can authenticate/connect to any EQUELLA URL as well as resources.

## Canvas integration

The LTI-based integration with the Canvas® by Instructure LMS responds to the need for clients to access a unified and supported integration. Built to seamlessly utilise the EQUELLA integration experience, this solution makes use of LTI as the key technical bridge in the integration, enabling users to add EQUELLA content to Canvas courses.

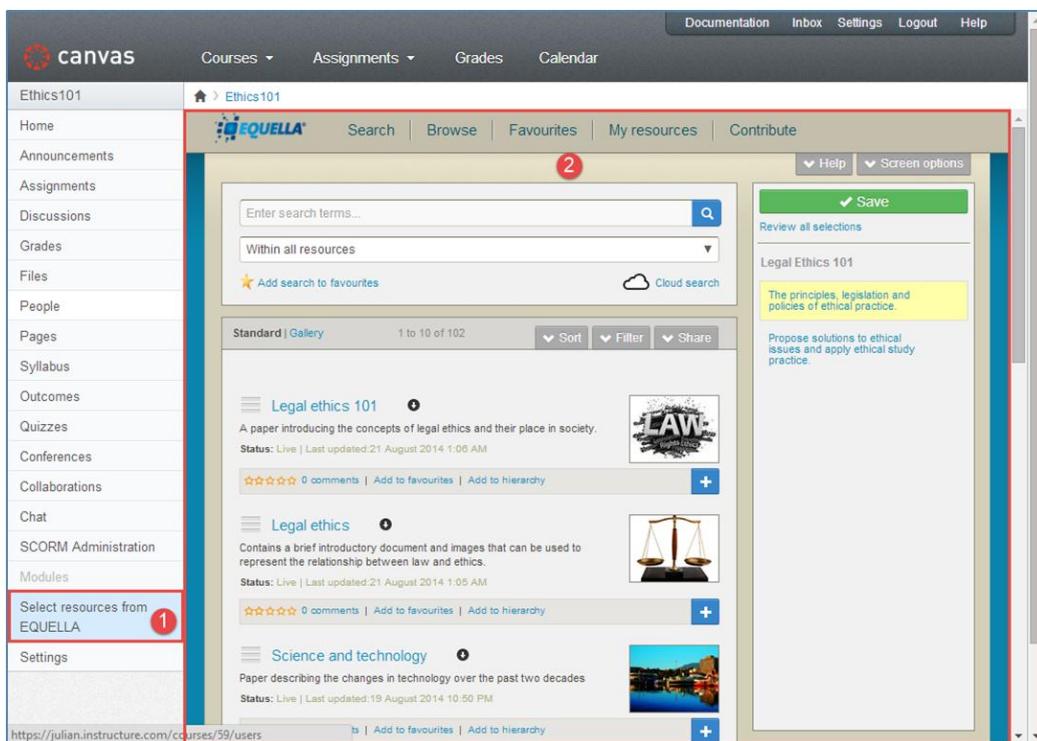


Figure 35 EQUELLA integration page in Canvas

## Cloud integration capabilities

EQUELLA provides integration support for cloud services, enabling users to utilise powerful capabilities for seamlessly searching for and consuming Open Educational Resources (OER) content on the cloud.

[Content without Borders](#), the open access EQUELLA repository now provides access to almost one million pieces of OER content, which can be utilised by users.

EQUELLA's capabilities for cloud services allow for locally installed EQUELLA instances to search and consume OER content within integrated LMSes. Users can search for OER cloud content from the integration screen and publish this into their course, the same way they would contribute standard EQUELLA content. The Cloud search occurs simultaneously with the standard EQUELLA search, so when a search term is entered on

an EQUELLA search page and matching items are located 'in the cloud', the user can easily view and select cloud content in addition to local EQUELLA content.

The screenshot shows the EQUELLA interface with a sidebar on the left containing various navigation options: Dashboard, Favourites, My resources, Search, Contribute, Browse resources by format..., Google search, Manage external resources, Manage resources, Manage activations, Reports, and Settings. The main area is titled "Cloud search" and has a search bar with the term "science". Below the search bar, there are buttons for "Add search to favourites" and "Local resources". The results section displays four items:

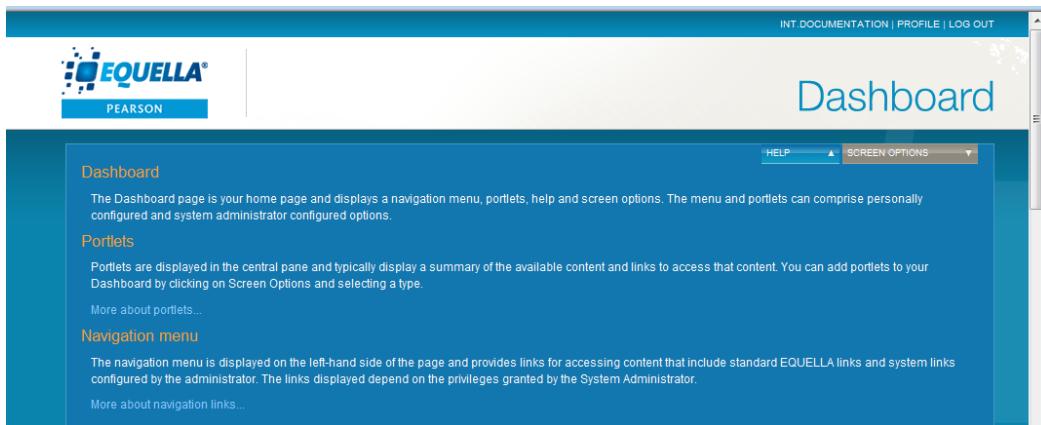
- California Academy of Sciences**  
This video features an official SAT practice question provided by the College Board.  
License: CC BY-NC-A 3.0  
Last updated: 1 months ago
- 26 Inconsistent science**  
This video features an official SAT practice question provided by the College Board.  
License: CC BY-NC-A 3.0  
Last updated: 1 months ago
- A Passion for Science Education**  
A passion for science education led Linda Jeschong from her life in accounting to a second act as an entrepreneur. She talks about the inspiration behind Hands-on Labs and overcoming the obstacles with a company created to send kits containing hydrochloric acid, cobalt nitrate and other hazardous elements to college chemistry students. Along the way, Jeschong has gained support and reached out to guide other women on the entrepreneurial path.  
License: CC BY-NC-A 3.0  
Last updated: 1 months ago
- Khan Academy Computer Science Launch**  
John Resig talks to Sal about the new computer science tools and content on Khan Academy (Available at: <http://www.khanacademy.org/cs>)  
Subject: khan, Academy, computer, science, Programming, john, resig  
License: CC BY-NC-A 3.0  
Last updated: 1 months ago

**Figure 36 Cloud search results page**

# Usability features

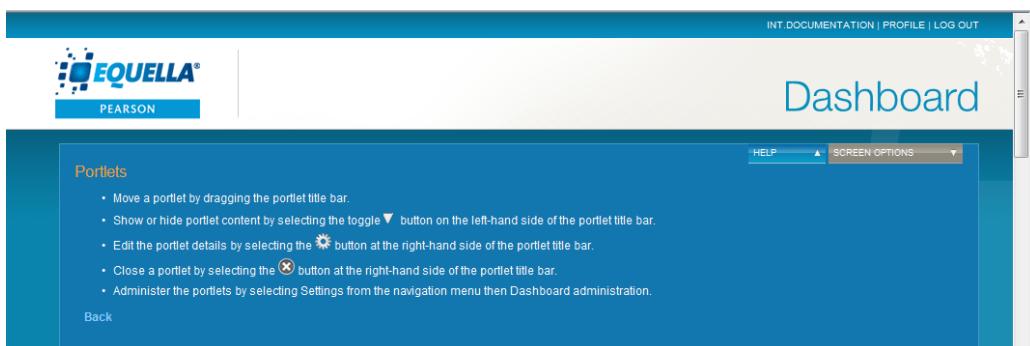
## Context sensitive help

Online context sensitive help is available to users.



**Figure 37 Help page**

Each help page displays additional text when a link is selected.



**Figure 38 Linked help page**

## Copyright compliance management

EQUELLA provides a convenient method for institutions to manage the digital materials they use. EQUELLA supports the concurrent use of Australian Copyright Agency Limited (CAL) and the United Kingdom Copyright Licensing Agency Limited (CLA) agreements.

The EQUELLA copyright compliance features include the ability to activate specific attachments (typically book chapters and journal articles) for particular periods within a course to ensure compliance with local copyright laws. EQUELLA automatically tracks content usage of the activated items and produces the appropriate reports, reducing the reporting workload for institutions.

The copyright features are simple to configure and provide custom activation error messages and copyright status agreements for display to users.

Key elements of the CAL module features include the ability for administrators to set the Part VB book percentage at a book collection level for their Books collection/s.

Additionally, a dedicated ACL allows users to override the copyright warning which would cause a possible breach of the copyright rule and prevent an activation from proceeding. Users can also edit Activation details via an ACL and use a course selector on the Activation page.

## Contributing copied material

Copyright items are contributed to the repository through interrelated collection definitions. Typically a parent item (source book or journal details) is contributed to a holding collection then the sections (copied or electronic book chapters or journal articles) are added to the portion collection and linked to the parent item in the holding collection.

The remote repository search features allow users to search for source details from a variety of external sources and automatically add them to EQUELLA, increasing accuracy and saving time.

## Use and activation of copied content

The copyright compliance features simplify the management of copyright material by controlling how much of the contributed copyright content is active at any time.

There are no restrictions on the amount of copyright content that can be contributed to the repository but it cannot be used until it has been activated. Content is activated when it is added to a course. Activation signals to the copyright compliance module that content usage should now be recorded and copyright compliance enforced. If the activation violates the copyright requirements, an error message is displayed and the content will not be made active. Once activated the content is viewable by course users.

The screenshot shows a software interface for managing eReserve materials. At the top, there are two buttons: 'Add comment anonymously' and '+ Add comment'. Below this, the word 'Copyright' is displayed. A list of items is shown in a table format:

Chapter 1: Sociology				
<input type="checkbox"/>	Sociology	30 pages (12%)	Pending	<button>Activate</button>
Chapter 2: Physics				
<input type="checkbox"/>	Physics	50 pages (20%)	Inactive	<button>Activate</button>
Chapter 3: Zoology				
<input type="checkbox"/>	Zoology	40 pages (16%)	Inactive	<button>Activate</button>
Mathematics as a science				
<input type="checkbox"/>	Mathematics as a science	14 pages (5.6%)	Active	<button>Activate</button>
Physiology and Pathology				
<input type="checkbox"/>	Physiology 2	12 pages (4.8%)	Inactive	<button>Activate</button>
<input type="checkbox"/>	Physiology and Pathology	13 pages (5.2%)	Inactive	<button>Activate</button>

Below the table, summary statistics are provided:

Total pages:	250
Pages available for activation:	11
Total percentage:	63.6%
Active total:	5.6%
Inactive total:	58%

At the bottom right, there is a button labeled 'Activate Selected'.

**Figure 39 Parent record with only activated attachments displaying as clickable links**

## Managing activations

Item activations can be tracked effortlessly by content contributors and deleted, deactivated and rolled over for future courses by administrators.

## Generating copyright compliance reports

EQUELLA generates reports that show all activated content for the reporting period. These reports are provided in a CAL or CLA format, which is also suitable for spreadsheet applications.

## eReserve functionality

EQUELLA provides eReserve functionality that enables institutions to manage online IP-restricted materials effectively. Controlling activations and access to licensed materials can be simply enforced. The use of eReserve materials is automatically tracked by

EQUELLA. Citations and reports are generated according to tailored rules, such as those administered by copyright agencies other than CAL and CLA.

## ***Contributing copyright content to an LMS course***

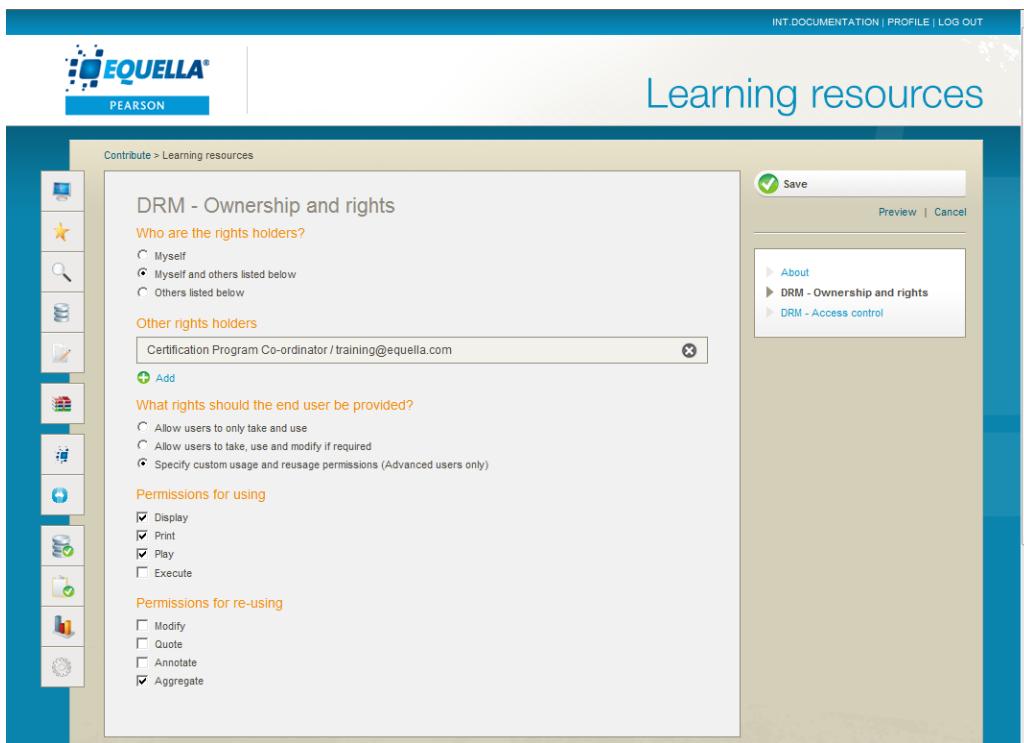
Users adding copyright content to LMS courses via the structured integration screen and Push to LMS (add to external system) function will discover copyright activations created in native EQUELLA both display and are selectable from the integration screen. Users can; Select existing activations (pending and active) to add to a course, and also Select existing activations. A user without the dedicated copyright privilege that accesses the EQUELLA integration screen from an LMS course page will see copyright items that have been activated against that course display as selectable attachments on both the results page and the Resource summary page.

## **Digital rights management**

EQUELLA provides digital rights management (DRM) functionality for administrators to configure Rights Statements within collections. The system also allows for the attribution of rights to content contained within EQUELLA. These rights can be specified by the contributor or automatically generated by the system.

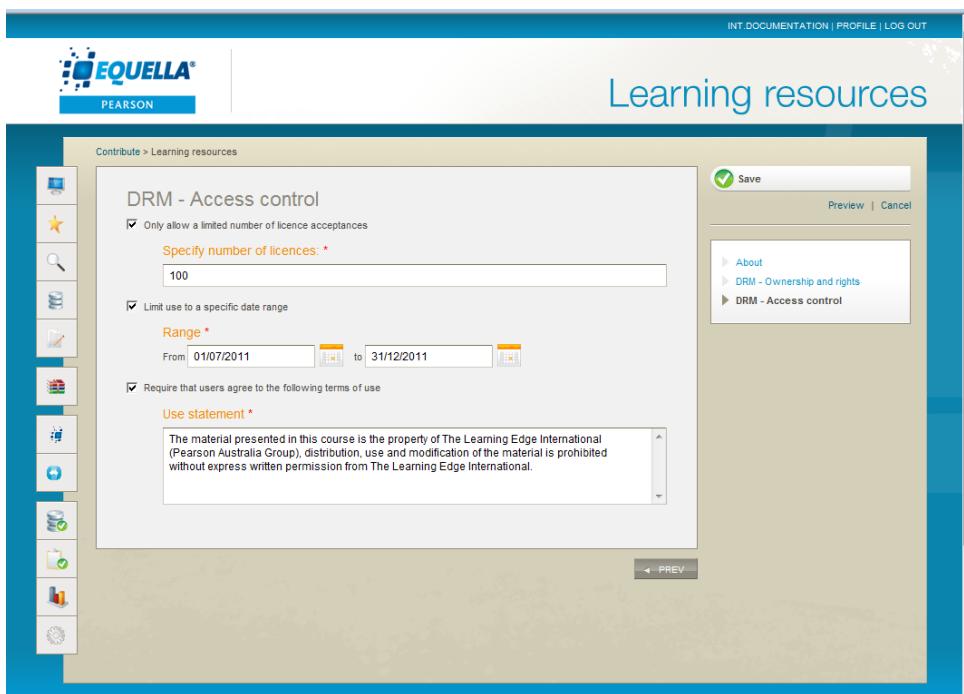
The broad DRM areas are:

- **Recording ownership**—EQUELLA allows a contributor to attribute ownership rights to one or more parties.
- **Reuse of the material**—that can include specifying:
  - broad access rights such as the right to display, print, execute, annotate, etc;
  - that materials can only be used in the educational sector; and
  - that users attribute ownership of the material to the original owners.



**Figure 40 Collecting basic digital rights information**

- **Access control**—that can include:
  - restrictions based on users and or groups;
  - restrictions based on computers (IP address ranges);
  - specifying a limited number of accesses; and
  - specifying a restricted date range for using the material.
- **Acceptance of a DRM agreement**—by selected:
  - users, groups or roles; and
  - IP address, HTTP referrer or with SSO identifier.



**Figure 41 Collecting advanced digital rights information**

A DRM licence with acceptance requirements can be displayed to users accessing content.

Licence acceptances are recorded by EQUELLA enabling tracking for review by contributors and administrators.

User	Date
Beta2 Phase1	21 November 2013 4:53 PM
administrator administrator	14 May 2013 2:59 AM
Administration User	13 May 2013 10:07 PM
equellademo equellademo	18 April 2013 9:18 PM
EQUELLA Beta	7 February 2013 3:37 AM

**Figure 42 Terms of use and the users who have accepted the DRM agreement**

# MIME type configuration

EQUELLA provides a system for defining how attachment MIME types are handled. Administrators can search for, upload, remove and edit MIME types based on file extensions. MIME type settings include:

- the icon and descriptive display name;
- appending a single sign-on (SSO) token;
- users interaction, such as:
  - open a new window, use of FancyBox and controls for the window sizes;
  - allocation of MIME types that can be embedded in the HTML Editor;
  - text extractors for free text indexing; and
  - viewing options for each MIME type.

Search results  
Showing 1 to 7 of 7 results

Sample content - The Overland Track  
Sample EQUELLA content: Photos, video and web sites about the Overland Track between Cradle Mountain and Lake St Clair in Tasmania.  
Status: Live | Last updated: 2 years ago

EQUELLA Promotional Video  
Short marketing video about EQUELLA  
Status: Live | Last updated: 2 years ago

EQUELLA 5 Documentation  
EQUELLA 5 PDF documentation at the time of release in mid April 2011. Check the web site (attached in the package) for the latest updates.  
Status: Live | Last updated: 2 months ago

**Figure 43 User's view of MIME types**

All enabled viewers will be displayed as options when viewing items.

South West Wilderness

Day 5  
D'Alton Falls  
D'Alton Falls in action

Day 6  
Sunrise  
St Clair

Overland Track Tasmania web site

Name: 4 - South West Wilderness  
Type: Image  
Size: 2.27 MB

File viewer  
Large image viewer

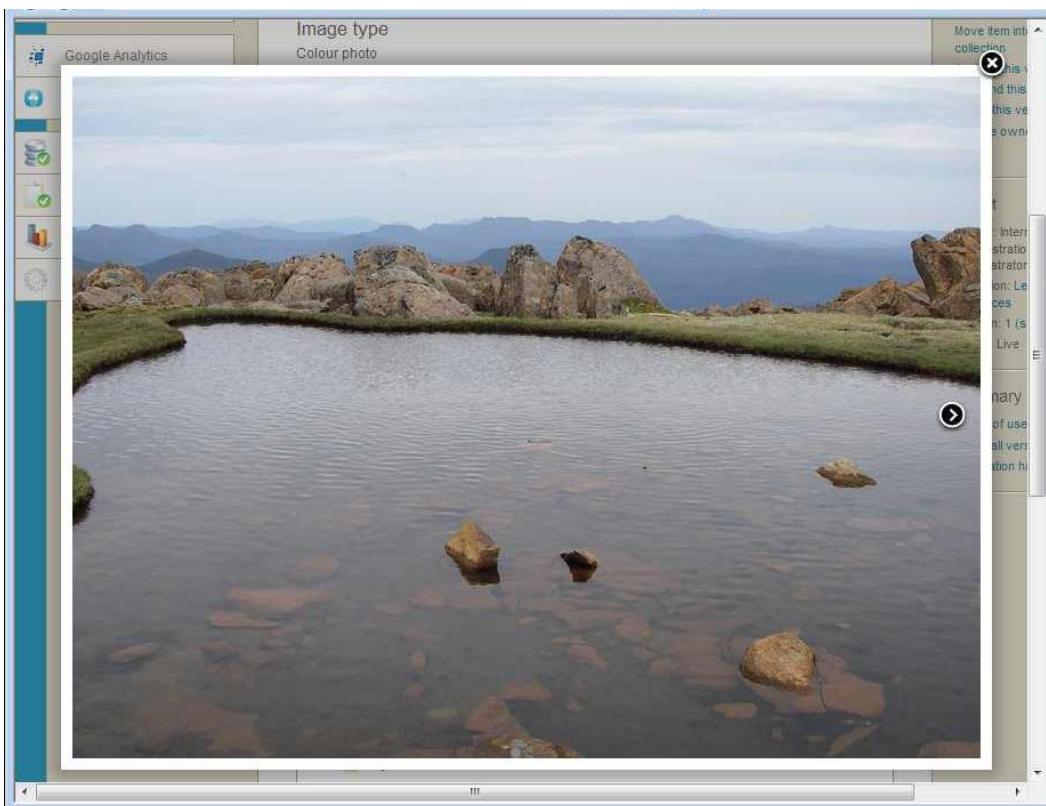
**Figure 44 User's view of MIME type viewer options**

## Image viewers

The extensive range of viewer options include:

- **File viewer**—displays the item in the current browser window or application.
- **Large image viewer**—displays all image types allowing the user to easily view very large, detailed images.

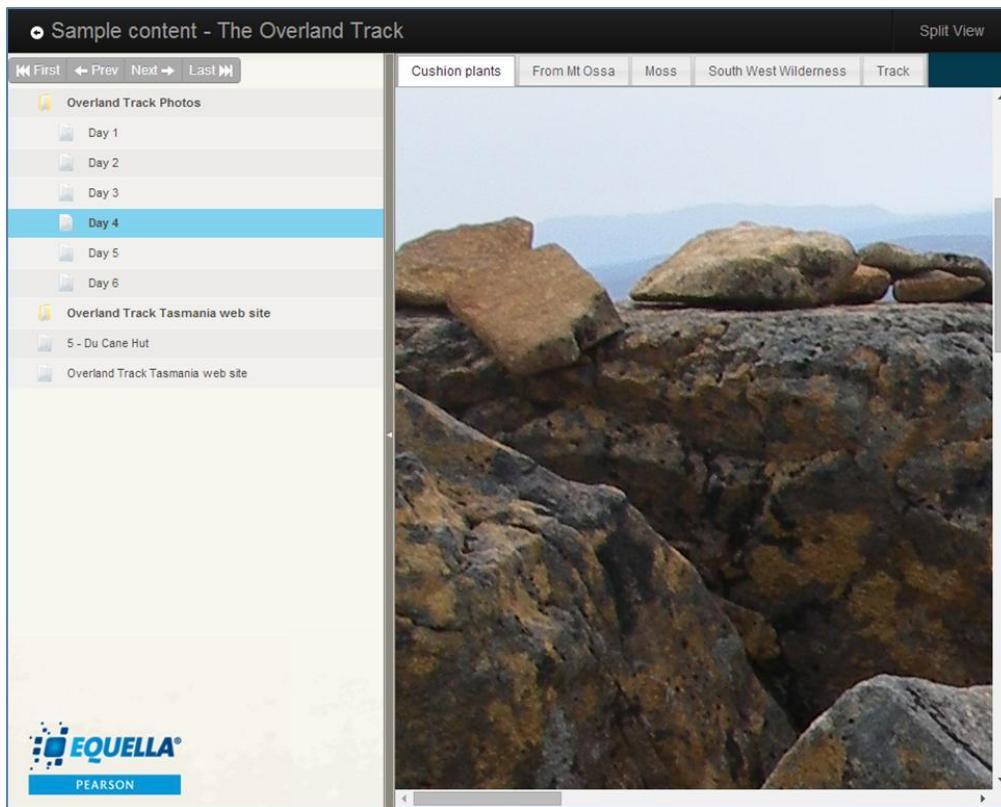
- **Gallery**—displays image/jpeg, image/png and image/gif in a gallery style allowing the user to iterate through a group of images.
- **Embedded movie player**—displays video/x-flv in a flash video viewer.
- **HTML conversion**—converts Microsoft Word™, PowerPoint™ and Excel™ 2003 application files to HTML.
- **View via Google Docs**—displays the item in GoogleDocs.
- **View as JPEG image**—displays all the ‘larger’ image formats (e.g. image(bitmap, image/x-portable-graymap) as a jpeg.
- **Download file**—force users to save rather than view the attachment.
- **Download package**—for downloading IMS packages (equella/ims-package).



**Figure 45** Gallery viewer

## Large image viewer

The large image viewer allows users to easily view very large, detailed images stored in the EQUELLA repository. Users are able to view the images at a reduced resolution with the ability to rotate, pan, and zoom out and in to view down to the finest detail of the image. A thumbnail view helps identify which part of the image is being viewed and enables quick navigation around the image. Users also have the ability to disable the thumbnails for certain MIME types, and enable rotation for when there are multiple attachments.



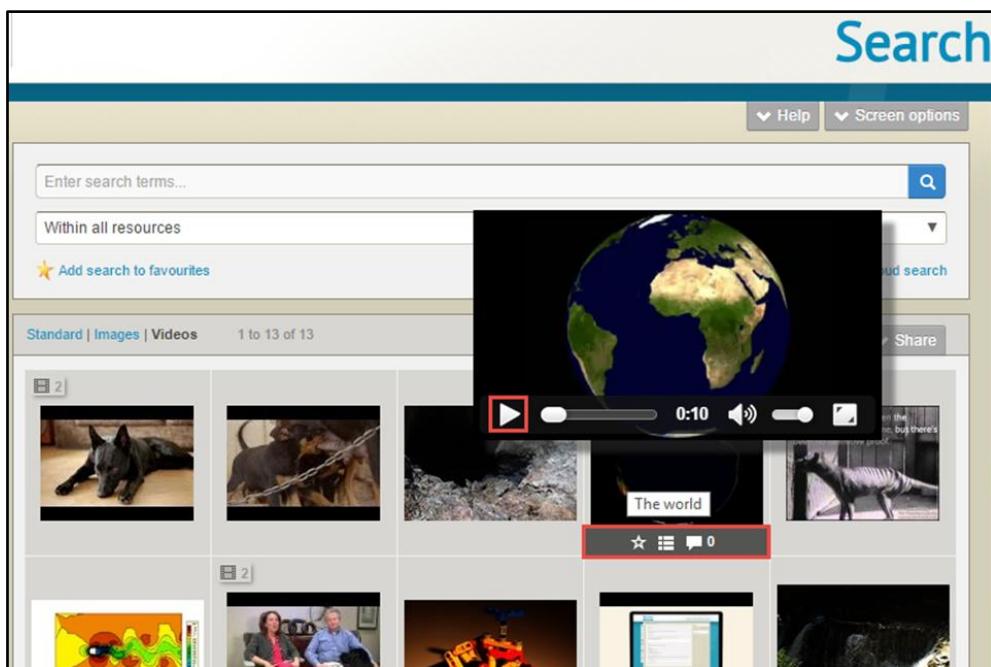
**Figure 46 Large image viewer**

## Gallery view

Gallery view presents users with the opportunity to build an Images and Videos View that displays search results with image and video attachments in a thumbnail format that delivers a graphical, grid display.

The ability to tile images and videos in search results delivers an extended Gallery view that equips users with the ability to display a series of images or videos. Each View allows search results to appear in a way that makes it easier to select photos or videos from a large number of results. Users can define the thumbnail representing each content item, while a simple mouse-over enlarges the image instantaneously and displays options, and for videos, a preview is available. Streaming media files, including videos from YouTube and Kaltura appear in the new video automatically. Additionally, resources with a YouTube and Kaltura link attachment will display on the Video results page, with a total of 30 video thumbnails displayed per page.

To display thumbnails and previews for video files (other than streaming media), a free, third-party product called Libav needs to be installed, which EQUELLA then utilises to produce thumbnails and previews for video files uploaded to the EQUELLA repository.



**Figure 47 Videos view preview frame and thumbnail menu**

## Internationalisation and localisation

EQUELLA's capabilities can be experienced by users worldwide, regardless of language. EQUELLA and its content can be viewed in a user's preferred language.

Users are able to contribute materials and assign metadata in multiple languages.



**Figure 48 Multi-language contributions**

Language Packs enable multi-language configuration of the system or for the customisation of any text on the screen, allowing for institution-specific branding.

## Language Pack Support

EQUELLA provides support for right-to-left languages such as Arabic as well as language pack support for other regions. This provides institutions with the ability to change common terms and strings of characters in EQUELLA to better match their institution's common terms and/or foreign language requirements.

## EQUELLA Student

EQUELLA Student has the flexibility to be configured to meet a variety of ePortfolio, web drive and other student-oriented content management requirements. Students can easily author web pages and aggregate materials to create contributed content packages.

Content can be contributed for review by instructors ensuring compliance with accreditation, academic and personal achievements and goals. Informal interaction via peer comments and rating of shared packages can also occur. The effectiveness of content stored within EQUELLA Student is extended due to its portability and ability to be shared with others. Institutions can configure EQUELLA Student to ensure appropriate usage, enabling students to develop and share content in a controlled environment.

# Administration features

## Administration settings

The EQUELLA Settings page provides access to administration tasks.

Administrators can manage MIME types based on file extensions; create and upload custom themes to tailor EQUELLA's 'look and feel'; provide custom links for EQUELLA user navigation; monitor site traffic and provide metrics for site development through Google Analytics; and review user information for all logged in users.

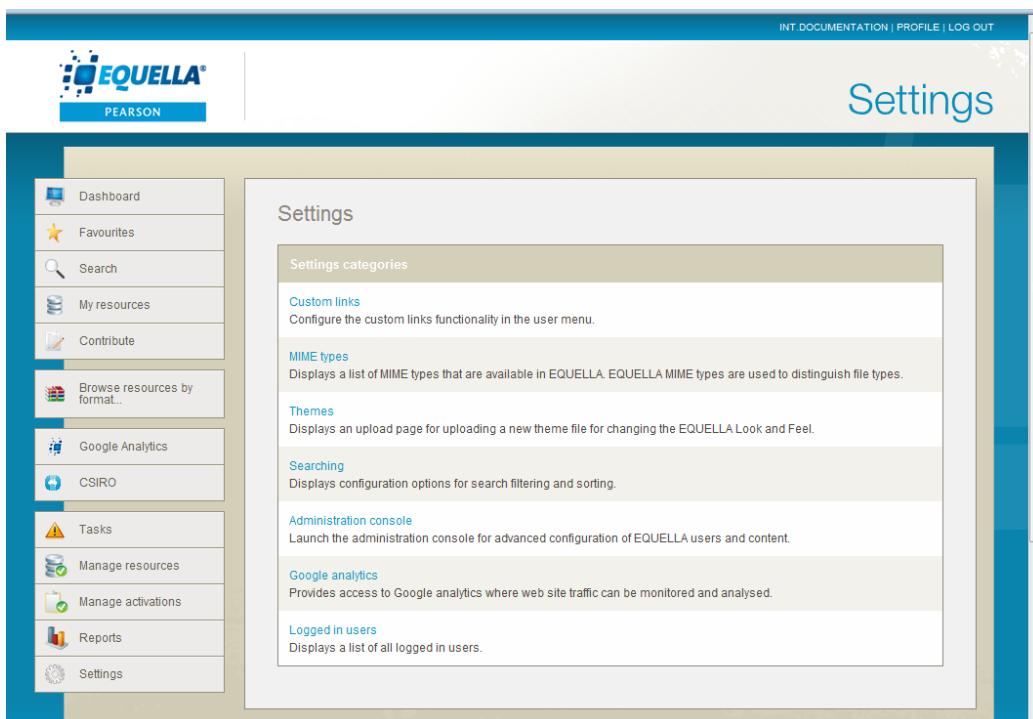
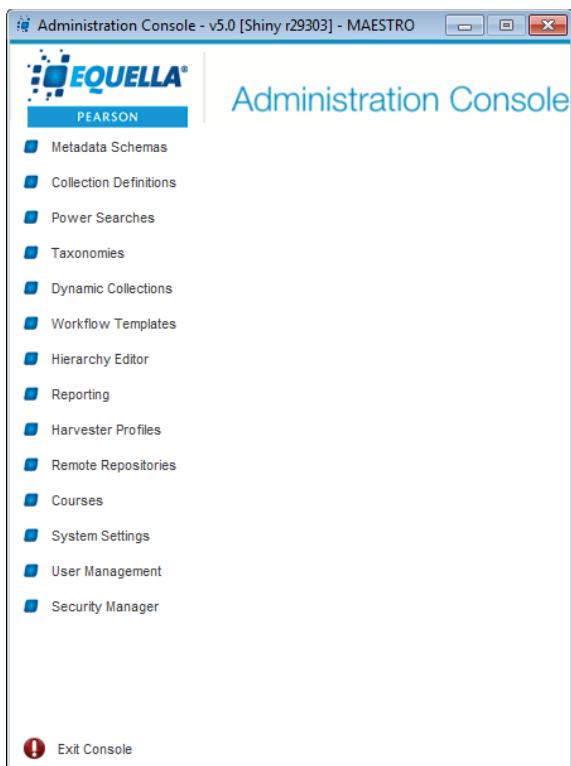


Figure 49 Settings page

## Administration Console

The EQUELLA Administration Console provides a powerful, easy to use and flexible interface for the management of all aspects of the EQUELLA suite of tools.



**Figure 50 Administration Console main view**

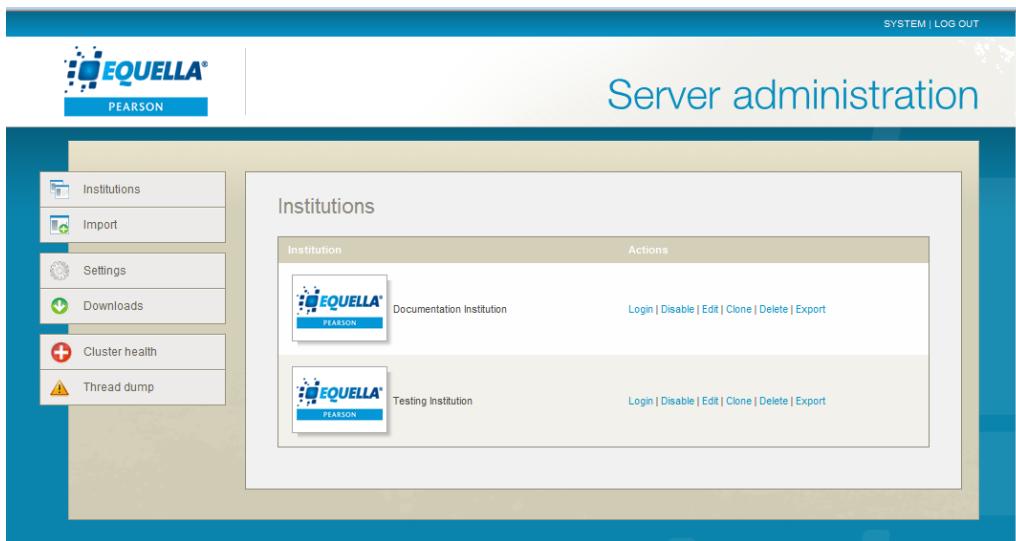
From within the Administration Console administrators have the ability to:

- define new and flexible XML based metadata schemas;
- create new or modify existing collections;
- design new data entry wizards (using a library of wizard controls);
- specify copyright and digital rights management requirements;
- use a powerful, intuitive and easy to use scripting language to enable data entry wizards to be customised depending on the user type and or other metadata elements provided during the submission/review/moderation process;
- design new workflows;
- classify and harvest content;
- specify system privileges and access control;
- define and administer federated searching sources (other external repositories);
- configure navigation links, advanced searches, and user management settings;
- configure various system settings, including URL checking functions, supported file types, login and mail server settings; content quota restrictions; caching schedules; and
- activate and administer integration with external products.

Ongoing customisation and administration of your EQUELLA solution can be performed with the help of EQUELLA's worldwide support and local consulting teams in the USA, Canada, Australia, the United Kingdom and Spain.

# Server administration

The Server administration account allows for convenient hosting of EQUELLA. One physical installation of EQUELLA can host as many institutions of EQUELLA as required.



**Figure 51 Server administration**

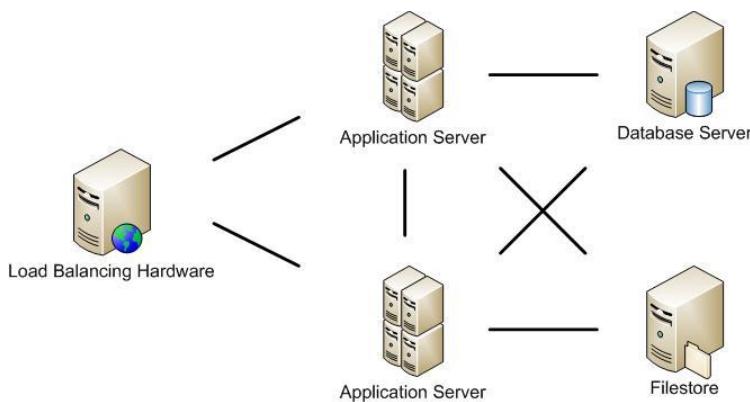
Each institution shares the same database and filestore but is entirely independent allowing new institutions to be easily added. Every institution can have an arbitrary base URL and a different time zone.

Server administrators can set a time zone for each institution that differs from the server time zone. Users can also override this with their own preferences. This is especially helpful for campuses that span different time zones, users who travel frequently and EQUELLA service providers who have clients in different time zones.

Other EQUELLA server administration account features include:

- cloning existing server institutions;
- importing institutions from other servers;
- editing, exporting, deleting or disabling institutions;
- setting a message that is displayed to all users on the server;
- downloading third-party integration installers;
- information about the threads that are running, processing and being accessed; and
- a troubleshooting tool for clustering.

As the shared installation size grows, more application servers can simply be added to the cluster.



**Figure 52 Simple clustering scheme**

Additionally, clustering support to assist large installations will ensure stability of clustering, with a greater increase in the ability to scale the application for enterprise use.

EQUELLA delivers support for increased synchronisation, and stronger configuration maintenance for the organisation, while coordinating distributed applications via one core server (location). EQUELLA's clustering capabilities will provide greater reliability and timeliness for an up-to-date system.

## Content Delivery Network

EQUELLA's support for CDN (Content Delivery Network) allows for the global distribution of localised content to improve network access speeds. EQUELLA's support for CDN with Akamai, an internet content delivery network, is tested and certified.

Improving the reliability and efficiency of content delivery, this functionality strengthens internet downloads and streams to ensure your institutional team are receiving content from the localised content server as quickly as possible.

## Multi Tenancy for databases

Clients have the ability to create and run each EQUELLA instance (institution) off a separate database, allowing a dedicated database for each institution. This enables separate reporting of EQUELLA institutions hosted on the same physical environment.

The use of multiple databases and the allocation of those databases to specific institutions enable those with read-only reporting privileges access to only a specific institution or institutions using an associated database.

## EQUELLA version management

The EQUELLA Manager is an easy-to-use web interface for configuring, starting, stopping, and upgrading EQUELLA.



**Figure 53 EQUELLA Manager**

The EQUELLA Manager communicates with the upgrade server and downloads new EQUELLA versions when they are available. Any new version can be deployed and older versions that have been downloaded, whether they have been deployed or not are also available.

## Security management

The Security Manager is a powerful feature available within the EQUELLA Administration Console. The Security Manager allows editing of permissions for all facets of the application in a flexible and unified manner. Within the Security Manager, a System Administrator is able to determine the access control settings for every element of the system.

The screenshot shows the Security Manager interface. On the left is a tree view of application components: Institution, Collections, Power Searches, Schemas (with Generic schema, My Content, Plan), Remote Repositories, Hierarchy, Courses, Taxonomies, Dynamic Collections, Portlets (with browse, favourites, freemarker, html, iframe, myresources, recent, rss, search, tasks), Reporting, Workflows, Harvester Profiles, Custom Links, Management Pages, System Settings, and Items. The main area is titled 'View / Modify ACLs' and contains a table with columns: Action, Privilege, Who?, and Override?. The table lists numerous grants for various actions like CREATE\_COLLECTION, DELETE\_COLLECTION, EDIT\_COLLECTION, etc., across different roles such as System Administrator Role, Viewer Role, Content Administrator Role, Contributor Role, Owner, and Exporter Role. Buttons for Add, Remove, and Save are visible on the right.

**Figure 54 Security Manager**

The Access Control Lists (ACLs) designed for flexible top-down management, allow system administrators to manage user access to access content within the repository. Management of objects can be delegated to users, groups and roles and applied institution-wide or to individual objects.

## ***Dynamic metadata ACLs***

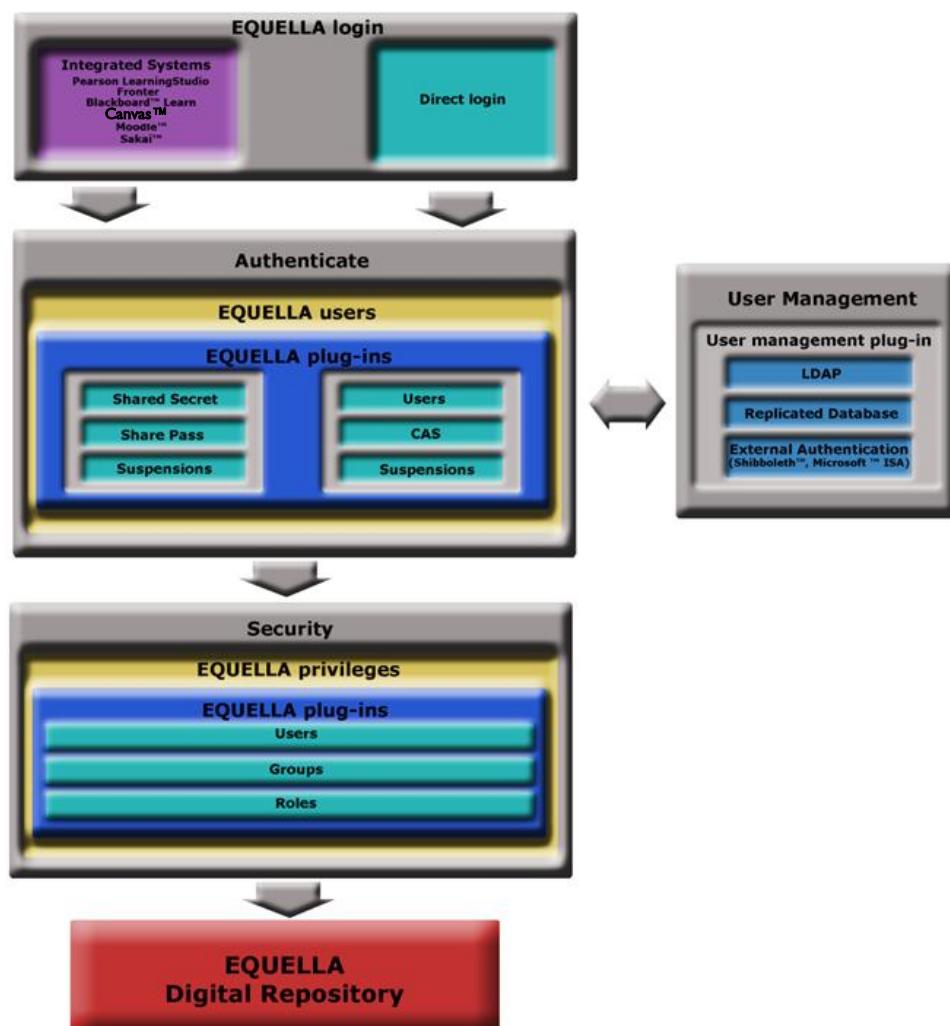
The dynamic metadata ACL feature enables the creation of permissions dynamically based on user, group or role IDs. Once a rule is set up for a collection, a contributor can select a user, group or role (depending on the rule), and preconfigured ACLs will be set automatically.

An EQUELLA group could be set up for each course an institution offers, and the users (students) enrolled in that course are added to the group. A dynamic metadata rule is created which sets the path, ID type (in this case, group) and the ACLs (privileges) that will be applied when a match is found during contribution. When the value of the metadata node for the group selector matches the group ID, the ACLs are automatically created.

# User management

EQUELLA supports a wide range of mechanisms to facilitate authentication and access control and manage users. These mechanisms include:

- Lightweight Directory Access Protocol (LDAP) support;
- CAS Replicated Datastore authentication;
- External Authentication including:
  - Shibboleth™
  - Microsoft™ ISA;
  - support for other authentication systems can be negotiated; and
- User creation and user login. Specific high security access calls can be restricted to a subset of IP addresses enabling portals or other websites access to user administration/access control functionality.



**Figure 55 EQUELLA User Management**

# Harvest content

## *EQUELLA Harvester*

Content from third-party sources can be obtained by using the EQUELLA Harvester tool and uploaded to your EQUELLA repository. This content is obtained from The Le@rning Federation (TLF) using the Learning Object Repository Access and eXchange (LORAX) protocol, while metadata can be gathered with the Open Archives Initiative (OAI) metadata harvesting protocol and content from other EQUELLA instances can also be collected.

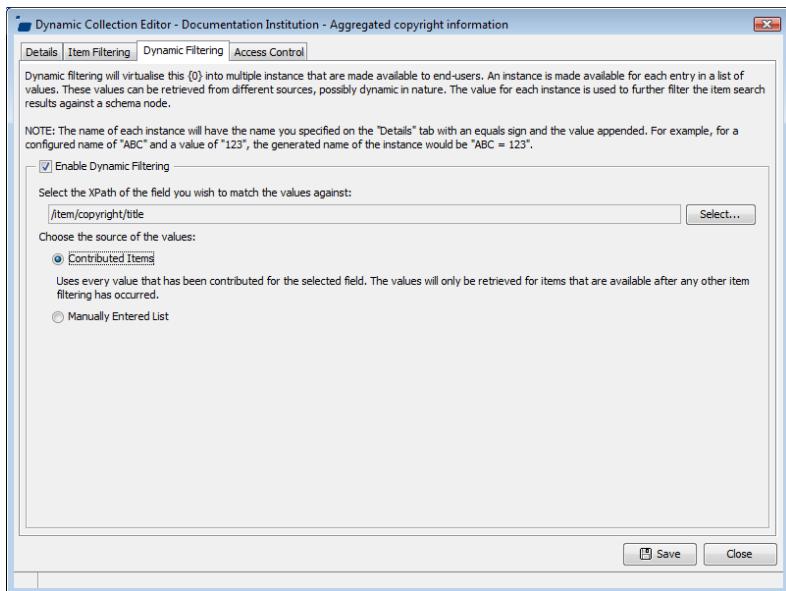
The Harvester Profiles tool:

- enables the harvests to be scheduled;
- provides harvesting of metadata and resources;
- allows harvesting of other EQUELLA repositories, enabling community repositories to be created with sizable pools of content; and
- allows multiple harvester profiles to be created and managed via the Administration Console.

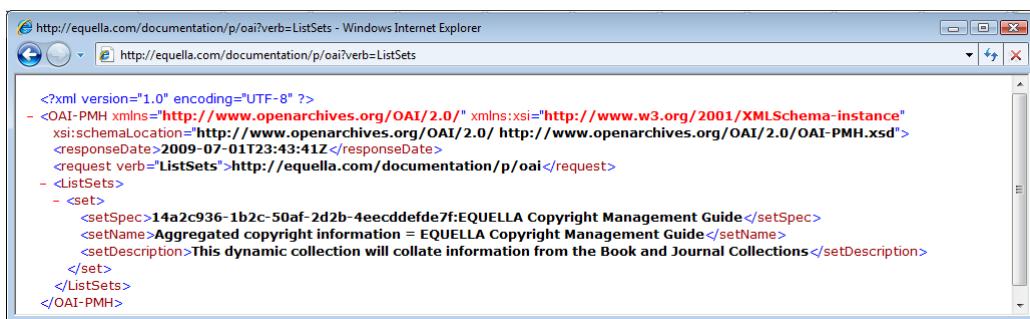
## *Configurable OAI Sets*

EQUELLA extends its selective harvesting of repository items and their metadata by providing configurable Open Archive Initiative (OAI) Sets. This functionality is provided through Dynamic Collections, which provide administrators with the ability to define a collection spanning multiple collections and individual items for use in OAI harvesting. Functionality includes:

- allowing for new OAI Sets to be defined;
- OAI Set results can be filtered by Collection and Schema; and
- 'Virtual' OAI Sets can be created for item metadata values;



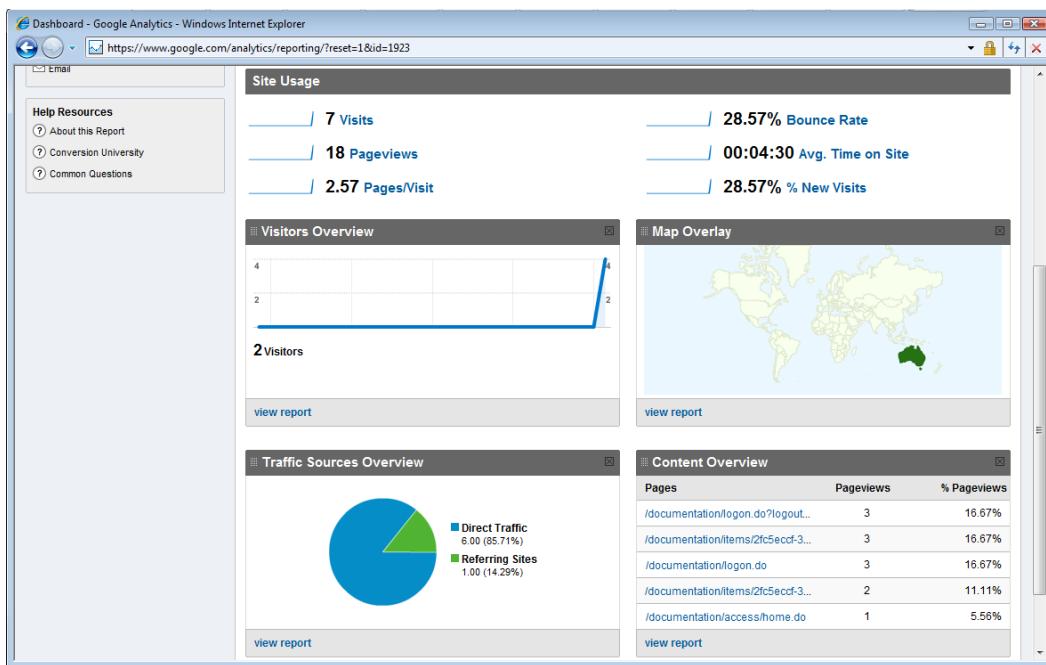
**Figure 56 Dynamic Collection filtering**



**Figure 57 Result List Set**

## Support for Google™ Analytics

EQUELLA provides support for Google Analytics, a free service offered by Google that is used to monitor site traffic and provide metrics for site development.



**Figure 58 EQUELLA website data provided by Google Analytics**

## Standards supported

EQUELLA provides extensive support for many well-known standards prevalent in the eLearning and knowledge repository space. Schemas in EQUELLA are compliant with Dublin Core, AGLS, IEEE LOM (Learning Object Metadata) and variants including CanCore, VETADATA and TLF (The Le@rning Federation).

EQUELLA complies with many other open standards such as:

- SCORM 1.3/2004, IMS, IMS DRI and METS—for import and export of items;
- Z39.50, MERLOT, SRW, LORN and edna—for remote repository searching including the ability to transform and import records;
- OAI-PMH and LORAX—for harvesting;
- LDAP, CAS and External Authentication (Shibboleth and Microsoft ISA)—for authentication;
- SOAP and WSDL—for web services;
- RSS and Atom—for publishing;
- ODRL—for storage of Digital Rights;
- MADS, MARC 21, MARCXML and MODS—for library system interfaces; and
- SHEX (Sharing Exchange) and MEX (Metadata Exchange) for access to free content provided under the National Digital Learning Resource Network (NDLRN)

The architecture of EQUELLA enables support for numerous other standards.

## Accessibility Standards

EQUELLA's user interface is also accessible to people with disabilities. The platform meets the international web content accessibility guidelines from the World Wide Web

Consortium, specifically Web Content Accessibility Guidelines Version 2.0 (WCAG 2.0) at Level AA, and also meets the current US Government Section 508 Standards, specifically § 1194.22 Web-based intranet and internet information and applications. Aligning with these guidelines ensures EQUELLA provides improved usability for those with disabilities, and also for users in general as the guidelines address a wide range of issues.

## Supported file types

EQUELLA stores files in their original format, with EQUELLA supporting most common file types including doc, docx, xls, xlsx, ppt, pdf, html, bmp, gif, mov, jpg, png, and swf. Administrators can exclude files considered to be a security risk, such as com, bat, scr, shs, exe, and vbs, according to institution-specific policies.

EQUELLA also handles complex file types such as zip and structured content (IMS, SCORM and METS packages), allowing access to their constituent files. When a content package is uploaded, it is unpacked and its structure is recreated in the repository.

EQUELLA supports conversion of Microsoft Word™, PowerPoint™, Excel™ 2003 application files to HTML format.

## Extensibility via Web Services

EQUELLA provides a series of external Web Service interfaces to programmatically control much of the core system functionality including:

- Document submission and retrieval;
- Searching (standard, guided and expert metadata searching);
- User management and authentication;
- Course inheritance;
- Workflow management; and
- Item configuration.

## Import/export engine

EQUELLA uses a powerful import and export engine that uploads external data sources comprising metadata or a combination of metadata and file attachments to EQUELLA.

EQUELLA has the ability to specify XSLT import and export transforms for schemas, allowing items to be stored in one generic internal metadata schema format and then transformed on output to be fully compliant with all current standards.

## Active Cache

The Active Cache provides a regularly updated, localised content store for schools or campuses that either have slower connection speeds, or are geographically separated from their EQUELLA instance. The Active Cache works in conjunction with other well

known web-caching technologies in an effort to reduce cost and delays while improving access to content. EQUELLA Active Cache provides:

- A solution to common bandwidth limitations found in centralised solutions;
- Localised pre-populated e-learning content;
- Active synchronisation with a central EQUELLA instance;
- The ability to selectively filter the types of materials to be actively cached; and
- Compatibility with well-known web caching solutions.

# EQUELLA support

## International User Community

The EQUELLA User Community facilitates interaction amongst the growing community of EQUELLA users and enables members to contribute, share and stay connected with other users globally, while extending their knowledge of EQUELLA.

The EQUELLA User Community also provides access to:

- EQUELLA documentation;
- EQUELLA Installer and upgrades; and
- Internationalisation packs.

To join the EQUELLA User Community, please email [community@equella.com](mailto:community@equella.com) to receive an invitation to become a member of the group.

The screenshot shows the homepage of the EQUELLA International User Community on the Neo platform. At the top, there's a navigation bar with links for 'Overview' (customized), 'Members (204)', 'Discussions (365)', 'Documents (51)', 'Blog', 'Polls', 'Ideas', and 'Videos'. Below the navigation, the main content area has several sections: 'Group Overview' (with a thumbnail image of a computer screen displaying EQUELLA), 'Recent Activity' (listing posts from Tanja Webster, Lisa, Nyssa Parks, Andrew Press, and Sam Parker), and an 'Actions' sidebar on the right containing links for starting discussions, creating documents, and managing the group. A 'RightNow' banner at the bottom right encourages users to register for EQUELLA Support.

**Figure 59 EQUELLA International User Community**

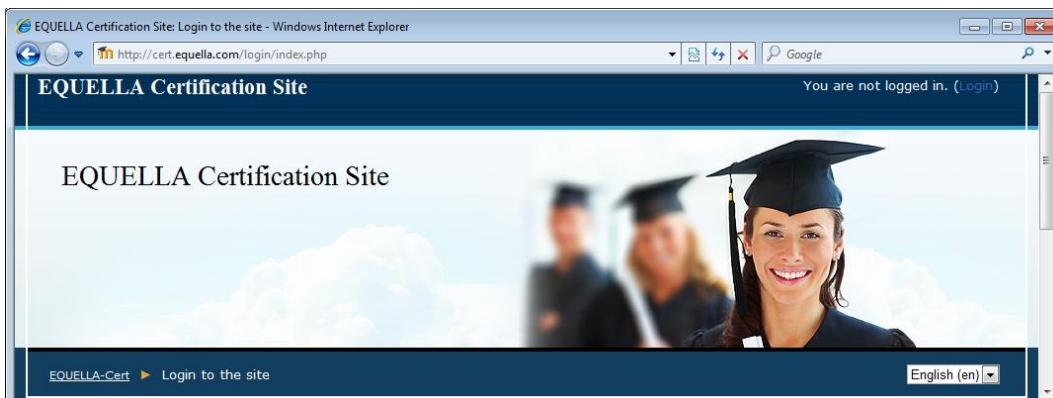
# Certification Programme

The EQUELLA Certification Programme is designed to equip users with the skill set to interact with EQUELLA effectively. The EQUELLA Certification training courses are based on fundamental technical use aspects of EQUELLA, but also include the context of educational technology theory around learning content management.

EQUELLA provides the following training courses:

- **EQ101**—EQUELLA Digital Repository Certification (Core Principles)
- **EQ201**—EQUELLA Content Administrator Certification
- **EQ301**—EQUELLA Application Administrator Certification
- **EQ302**—EQUELLA Advanced Application Administrator Workshop
- **EQ303**—EQUELLA Reporting Workshop
- **EQ304**—EQUELLA EBI Workshop
- **EQ305**—EQUELLA Scripting Workshop
- **EQ306**—EQUELLA Advanced Scripting Workshop
- **EQ401** —EQUELLA System Administrator Certification

Contact [info@equella.com](mailto:info@equella.com) to organise certification training for your institute.



**Figure 60 EQUELLA Certification Programme**

## Client support

EQUELLA system administrators have access to the EQUELLA Support Site.

Contact [support@equella.com](mailto:support@equella.com) to obtain a login to the Support Site:  
<http://equella.custhelp.com/>

EQUELLA Client Support provides:

- Knowledgebase;
- Open and track support tickets;
- Sample reports;
- Miscellaneous tools; and
- Access to consultants.

## Pearson Professional Services

Pearson Consultants offer at-cost services including:

- Customised scripting;
- Integration enhancements;
- Transformation templates;
- Security configuration; and
- Bulk importing of items and user records from legacy systems.

Contact [professionalservices@equella.com](mailto:professionalservices@equella.com) for all educational, institutional and platform or product related enquiries.

# Technical requirements

Client Requirements	
Software	Browsers
<ul style="list-style-type: none"><li>• Oracle Java 8 or higher</li></ul>	<ul style="list-style-type: none"><li>• Microsoft Internet Explorer 9, 10 and 11</li><li>• Apple Safari (Mac version only) 6 or higher</li><li>• Mozilla Firefox Latest</li><li>• Google Chrome Latest</li></ul>

Server Requirements	
Operating Systems	
<ul style="list-style-type: none"><li>• Microsoft Windows Server 2008 &amp; 2012, and Windows 7 &amp; 8.1; or</li><li>• Most Linux distributions</li></ul>	
Supported Databases	
<ul style="list-style-type: none"><li>• Oracle 10g, 11g and 12c</li><li>• Microsoft SQL Server 2008, 2008 R2, 2012 and 2014</li><li>• PostgreSQL 8.0 or higher</li></ul>	
Application Server Requirements	
<ul style="list-style-type: none"><li>• Java 8 (the latest point release at time of installation is recommended)</li><li>• Zookeeper 3.4.6 (distributed with EQUELLA)</li><li>• ImageMagick 6.4 or higher</li></ul>	
<p>Please Note: ImageMagick 6.8.9 or higher is required for digital camera RAW image files. Dependency on Ghostscript, for generation of PDF thumbnails and LibAv, for generation of video previews and thumbnails.</p>	
Messaging Subsystem Requirements	
<ul style="list-style-type: none"><li>• Standard SMTP compliant mail server.</li></ul>	
Security Infrastructure	
<ul style="list-style-type: none"><li>• EQUELLA provides its own internal access control security layer. If SSL enabled logins are desired, a SSL Certificate is required; or</li><li>• LDAP – Sun ONE, Microsoft Active Directory and other LDAP compliant services.</li></ul>	

Application Development Language
EQUELLA is a J2EE application. The Administration Console is a lightweight Java Web Start application that is fully browser compliant.

<b>Hardware Recommendations</b>	
Standard Configuration	
We recommend one application server with the following specification:	
<ul style="list-style-type: none"><li>○ 4 core 64 bit CPU</li><li>○ 10 GB of Ram</li><li>○ 200 GB HD for local application storage only</li><li>○ Additional Storage as desired for content storage</li></ul>	
High Availability	
We recommend two clustered application servers (in High Availability configuration) with the following specification:	
<ul style="list-style-type: none"><li>○ 2 X 4 core 64 bit CPUs</li><li>○ 8 GB of Ram</li><li>○ 200 GB HD for local application storage only</li></ul>	
The servers need to have a load balancer that supports sticky sessions and HTTPS offloading (if HTTPS required) or an Apache Web Server Storage in HA configuration needs to be shared. The recommendation is for a NAS/SAN environment or Windows Server equivalent.	

## Contact Client Support

We are always happy to help.

If your organisation has a support agreement with EQUELLA then help is available at <http://equella.custhelp.com/.>