

Transforming Learning Resources: improving accessibility and engagement for students and teaching staff

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Abstract:

The University of Queensland Library maintains a centralised Learning Resources Service in support of teaching and learning within the University. This paper discusses the recent implementation of a learning resources application, Talis Aspire. The drivers for moving to a new application were to ensure student engagement with learning resources is enhanced, teaching staff are integrated with ownership of reading lists, and the potential for increased staff efficiency is supported by real performance data.

Introduction

The Learning Resources Service at the University of Queensland (UQ) Library has evolved over the last few years with the key goal of improving the end user experience. The Service was centralised in 2011, and this was followed closely by the introduction of new technologies to enhance the provision of learning resources. This included the implementation of a new learning resources application to further support teaching and learning. Another goal of the Service is to be able to identify key measurables as a means of demonstrating its relevance and value in the university.

This paper will present a background on the Learning Resources Service at UQ Library and the rationale behind the selection and implementation of Talis Aspire Reading Lists (TARL) and Talis Aspire Digitised Content (TADC) modules to provide more functionality and usability to teaching staff and students, along with additional benefits of access to analytics.

Establishing the Learning Resources Service

The Learning Resources Service manages course reading lists at UQ Library. Copyright compliance is ensured in an end-to-end service, from submission and compilation, through to course-specific access. The aim of the Service is to add value to the user experience by enhancing accessibility to learning resources in support of teaching and learning.

The Service actively seeks readings from the Electronic Course Profile (ECP) Database and creates learning resources lists for all courses delivered. As UQ policy mandates teaching staff submission of ECPs for all courses, this assists the Service in the provision of equitable distribution of resources. In addition, the Service also receives additional reading lists from teaching staff, and will add these to the learning resources lists created from the ECP. Learning resources lists comprise of both electronic and print resources; including books, chapters, journal articles, streamed multimedia, and web content. The learning resources lists are embedded within the students' personalised library portal 'MyLibrary', course Blackboard sites and, ECPs, and are discoverable via the UQ Library homepage and search engines such as Google.

The Service was established as a centralised model on the St Lucia campus in 2011, with the addition of Herston and Gatton campuses in 2015. Prior to this, the service varied between branches, depending on what was agreed upon between librarians and teaching staff. One of the main drivers of the centralised model is to provide a standardised service for all courses to the advantage of the end user, along with the associated benefits of consistency in procedures and workload management of library staff.

Initially, the structure of the Learning Resources Service included a Co-ordinator and a Supervisor, who were responsible for managing the workflow of processes and

delegating reading lists across four physical locations to more than 30 Library Assistants and Senior Library Assistants. The staff who are assigned reading lists are responsible for all aspects of list creation and management. This includes ordering of texts, ensuring digitisations of chapters and articles are available via lists where possible, and movement of resources in and out of short-term loan collections. The use of task management software enables the Service to track progress of completion rates and work towards achieving service Key Performance Indicators (KPIs). The software has also been able to provide an overview of expected workloads for individual course lists.

Prior to the introduction of the new learning resources application, reading lists were created in the Library management system, Millennium, in a simple A-Z listing. Feedback from teaching staff to the Learning Resources Service often involved requests for resources to be listed by reading week or by topic which was not possible using Millennium.

Since centralisation, developments have focused on enhancing the value of the Service and the user experience by improving accessibility, usability, timeliness and increasing discoverability of library resources. The implementation of Talis Aspire was a significant move in introducing externally focused improvements to the Learning Resources Service.

Due to a changed service model within the Library in early 2015, there have been some changes to staffing, and the Learning Resources Service is currently working with a dedicated team of five staff. This team processes approximately 2,000 ECPs each semester, in addition to an average of 500 email requests.

Learning resources in the literature

University libraries have long maintained reading lists to provide access to library resources, both in print and electronic formats. For many years, the UQ Library has provided a reading list service that continues to evolve and develop to the present day.

The provision of learning resources is central to the university, as it concerns teaching staff, students and the library. Learning Resources plays an important role for each of these groups of stakeholders, although each group is driven by different expectations. Students expect reading lists resources to be easy to identify and to locate. Reading lists provide students with clear guidance and expectations regarding the reading workload for their courses. Academics are driven by the desire to provide students with relevant resources to support their teaching, and for resources to be easily identified and located. Libraries are also invested in reading lists as they encourage awareness and use of library resources. Associated with this is the need to manage collection development activities to support teaching and learning. As stated by Jones, 'reading lists are created and maintained to direct use of resources, used to obtain resources, and to make decisions about provision of access to resources' (2006 cited in Derven 2011, p. 5).

Libraries are increasingly seeking to support teaching and learning through the delivery of content and services. Driven by changing technology and teaching practices, it is necessary for libraries to be 'refocussing on the need to manage multi-format, blended collections of integrated learning materials: the "resource list"' (Cross 2015, p. 211). This includes integrating reading lists into the teaching and learning environment. As student learning increasingly occurs in the virtual learning environment (Dale 2011), library services and resources need to move there too.

Recent research has demonstrated a relationship between use of library resources and student results (Stone & Ramsden 2013; Weaver 2013). As this relationship has such a significant impact on users, it is vital for academic libraries to continue 'demonstrating value and excellence to students' (Stone & Ramsden 2013, p. 546). The successful provision of reading lists by academic libraries will be measured by demonstrating 'student engagement with reading list resources made available by the library service' (Cross 2015, p. 212). This further endorses the requirement for academic libraries to be able to engage students and add value to the student experience.

Along with the need for greater accountability, it is also important for libraries to measure performance of their investment in resources and services. (Dale 2011). Usage statistics and analytics are becoming increasingly important in the education sector. Libraries have a long-standing practice of collecting statistics, although the focus has shifted to further evaluating and measuring performance and outcomes. Due to the changing economic climate and the drive for evidence-based practice, there is a need for greater understanding and analysis of data. This recent focus on analytics and on demonstrating value has requires the Learning Resources Service at UQ to evaluate the impact of providing reading lists.

Project: how best to support learning resources

In 2013 the UQ Library established a project to investigate how best to support learning resources. The rationale for the project was to support the delivery of learning resources as a core requirement in the UQ Library Operational Plan 2013. The project also sought to align the Learning Resources Service with the UQ focus on e-learning, which required organisational units to review their supporting relationships and infrastructure to maximise student engagement. The project focused on identifying best practice in the creation and provision of learning resources within Australia, identifying software and practices that underpin best practice models, and identifying data required to provide ongoing useful performance measures. As a result of the project, the Library saw the opportunity of further enhancing the Learning Resources Service through the adoption of a new software application.

Prior to the project, a module within the Millennium library management system was used for the provision of learning resource lists. This module provided access to the lists via the online catalogue, and readings were presented alphabetically. The limitations of this display had been criticised by academic staff, who wanted increased flexibility in the structure of the lists provided by the library.

An informal investigation was conducted to identify systems used for provision of learning resources in a number of Australian universities. The investigation also looked at purchasing algorithms for 'required' and 'recommended' textbooks along with designated loan periods, and all policies associated with learning resources practices. A number of universities were also canvassed about the management of their digitisation services. Talis Aspire was identified as a suitable application to deliver UQ Library's requirements and it was agreed to go ahead with a trial.

Talis Aspire was founded in 1969 as the Birmingham Libraries Co-operative Mechanism Project, focused on enhancing library efficiency. The company operates on a global scale with 83 customers across seven countries. The Talis Aspire Reading List application is marketed as an end-to-end solution to support consistent, useful and accurate reading list services. The application is web-based and can be accessed online from any device. It offers integration with existing systems, including library catalogues, discovery layers, student registries, link resolvers, Security Assertion Markup Language (SAML) authentication, citation tools and bookstores. The application facilitates easy and flexible list building, and enhances collaboration across the organisation. Features of the application, such as the ability to set reading status and add private study notes to individual readings, encourage students to interact with list content.

Site visits

At the time UQ Library was trialling Talis Aspire, Monash University Library was the only university in Australia to have acquired and implemented the application. UQ Library staff visited Monash University to discuss implementation processes and the value of the system. Time was spent reviewing UQ Library procedures, with a focus on streamlining workloads and minimising tasks. Reduction in staff work practices was a significant driver for converting to a new system.

La Trobe University Library began investigating the Talis Aspire Reading List module at a similar time to UQ Library, so a second site visit was carried out. The visit proved successful in gaining shared insight into implementing the new system, and learning from current and proposed workflows.

Implementation of the new application

A trial of the Talis Aspire Reading List module was conducted for the delivery of learning resources during Summer Semester 2013. The trial involved 70 course lists, and was met with positive feedback from academic staff. The UQ Library decided to adopt the application for the full provision of learning resources commencing Semester 1 2014. This involved the re-creation of all course lists. It was decided to re-create the lists in favour of the export of existing lists from the Library's Millennium course resources module. Factors influencing this decision include:

- the foreseen benefit for quicker processing for staff to recreate lists

- the opportunity for staff to become increasingly familiar with using the new application and procedures
- ensuring all reading lists were current

Prior to commencement of Semester 1 2014, library staff training in Talis Aspire was rolled out to ensure staff were prepared for the coming semester. In a short timeframe, staff learned how to competently use a new application, and follow new procedures and workflows for the creation of approximately 1700 reading lists from scratch.

The promotion of the new application to both students and teaching staff was minimal. This was due to the reading lists being available via the same access point as the previous system. Students and teaching staff continue to access reading lists from the Library website, Blackboard, and the ECP.

The Library created an online tutorial to promote the Talis Aspire reading lists students. The tutorial covers finding and managing course readings, focussing on the features available to students. Teaching staff are encouraged to publicise the tutorial to students in class, and via course Blackboard sites.

Participation in pilot programme

In Semester 1 2014, UQ Library, along with Griffith University Library, agreed to participate in the pilot program for the Talis Aspire Digitised Content (TADC) module. The pilot program involved thorough testing of the module to ensure its compliance with Australian copyright law. The application was tested for a number of weeks, and detailed feedback was delivered via weekly teleconference sessions with Talis Aspire staff in the United Kingdom.

The TADC module is a cloud based application that manages digitised resources, accessible via the TARC module. Functionality includes the storage of digitised content uploaded by library staff, the automatic activation of digitised content when subsequently requested, and the recording and retrieval of mandatory elements necessary when reporting to the Copyright Agency Limited (CAL).

The Service began using the Talis Aspire Digitised Content module in Semester 1 2014. Previously, the Library's digitised files were stored on a local server. Staff were responsible for manually managing copyright of these files, including suppression and reactivation. As part of the process of implementation, existing scans were imported from the server to the TADC module cloud storage. This involved an intensive process of accumulating and refining datasheets to create readable records that could be translated into the new systems. Although not all pre-existing digitisations were successfully transferred, approximately 70% were able to be made available in TADC.

Application system features and benefits

The Talis Aspire Reading List and Digitisation Content modules are packaged together as the Talis Aspire Campus Edition application; however, both modules can be adopted independently. The application provides limited customisation for institutions to determine their own level of integration and their own workflows in how they desire to utilise the application. Institutions have adopted the application in various ways; from staff responsibility for list creation and management, to the range of courses that have lists created in the Reading List module.

As the application can operate independent of library specific systems, and is a cloud-based application, it offers accessibility on a university-wide scale, ultimately providing university-wide benefits. All staff within the university have the potential for various system access roles, which are approved by a system administrator. The application therefore offers a bridge between the academic and library staff to facilitate more collaborative processes in the delivery of learning resources lists. The UQ Library Learning Resources Service ultimately plans to utilise the full streamlining functionality of the Talis Aspire application to deliver a more flexible service in list creation, management and provision in support of teaching staff and for the benefit of all end users.

Reading List module

The system features of the Talis Aspire Reading List module include front- and back-end functionality, both providing benefits for all users of the application.

Front-end features provide students with an engaging and consistent experience of learning resources lists across all courses. The option for embedding reading lists within the VLE (Virtual Learning Environment) also further benefits students by providing ease of access. Students who create a profile within the TARL module are able to interact with reading lists by adding private study notes and setting a read status for individual readings on lists.

Other features and benefits of the module include:

- the option for students to export list content to referencing software
- Excel or PDF view of reading lists
- the option to display lists as a bibliography in a number of pre-set styles
- the ability to sort lists by content type such as article or chapter
- the ability to sort by importance setting to easily identify *Required*, *Recommended* or *Further* readings

By clicking on items within a reading list, a page is displayed with comprehensive information about the resource, including bibliographic metadata and a live availability feed for items held in the Library, with a link through to the catalogue record. The item resource page will also provide links to online resources such as articles, eBooks or web content, and provide embedded display of locally scanned

digitisations, some audiovisual materials, Google book previews, and bookstore widgets where available.

The TARL module is also characterised by flexibility in how list content can be structured; teaching staff are able to reflect their preferences in list presentation to match weekly or modular teaching order, resulting in more logical and comprehensible presentation of readings for students.

For UQ Library, this has been a huge improvement over the previous learning resources delivery system, which could only present resources by alphabetical listing of author name, and provided no opportunity for student interaction with resources.

Back-end features of the TARL module are utilised by teaching and library staff in the provision of reading lists. The Library's Learning Resource Service currently creates and manages all reading lists; however, the Reading List module also provides the option for teaching staff to create and publish their own reading lists, facilitating workflow efficiencies across the institution.

The simplicity of building lists in the module aids in the promotion of this feature to teaching staff. Lists can be created via a *bookmarklet* tool added to a web browser. Lists can also be created by importing readings directly from citation manager tools. Adding content and modifying lists is via a click and drag mechanism. VLE embedded learning resource lists are able to be modified from within the VLE, and the ability to access lists from anywhere with internet access provides convenience for teaching staff to edit and make changes at a time that suits them, and to make those changes instantly accessible to students.

Another benefit for teaching staff who manage their own lists is direct access to the Dashboard. This feature is available from each list in the TARL module, and provides access to real-time usage statistics for resources on lists. It functions as a form of feedback on resource performance and student engagement with readings. This feature can facilitate informed decisions about what items to keep on a reading list, or when teaching staff may need to approach students to engage more with readings.

Engaging teaching staff in list creation and management will have a major impact on the UQ Library Learning Resources service. It enables the delivery of a more flexible service, facilitates cooperative relationships between library and teaching staff, eliminates duplication of work in the creation of reading lists, and potentially frees up library resources for distribution in other areas.

Additional benefits for library staff include bulk processing, reporting and access to analytics.

Bulk processing features include the option known as 'rollover', which performs the automated duplication of lists from one set time period to another designated time period. Other processes include a 'book metadata refresh', which attempts to link provisional resource records to the library catalogue as newly acquired resources become available in the collection.

Reporting also allows for more automated approaches for necessary tasks, such as the movement of resources into short term loan collections. The module further provides reporting and filtering for all lists existing within the system, items on lists, users who have created profiles, and other administrative aspects. In addition to assisting with the movement of collections, these reports have been used to identifying errors in metadata or administration, and are continuing to assist with the evolution of processes to deliver a more timely and accurate provision of reading lists.

The analytics, both from the Dashboard and Google Analytics, provides a statistical tool for collection development and collection management activities. Library staff are also better informed for making workload management and holdings decisions.

Digitised Content module

The Talis Aspire Digitisation Content module features include easy pre-populated request forms, unlimited cloud storage, automatic retrieval from the cloud storage, copyright management, bulk processing functions and reporting.

When teaching or library staff submit a request to the TARD module to initiate digitisation for a resource, they are presented with a pop-up form, which is pre-populated with metadata from the item resource record. The request is lodged in the TARD module, where the processing for all locally scanned files is managed. When files are uploaded to fulfil a request, the file is permanently stored in the cloud. If this specific file is requested in future for another semester or list, the system will attempt to match metadata fields and prompt automatic retrieval of the file. Benefits of this include ease of use, remote storage for files, reduced workloads in manual processing of files, and instant access to readings for teaching staff and students when they are needed.

At the point of requesting a digitisation, the module performs a copyright compliance check against other files currently communicated via the system. A message notifies the requester if the request was successful or if there are any issues, such as copyright limits exceeded, or if electronic versions of requests, such as eBooks, exist in the library catalogue, which can be linked to in the reading list to provide online access. A large portion of copyright management has been automated, although there are still cases where manually checking and processing is required. The module also assists with reporting required by CAL, providing exportable data of necessary information. This is expected to provide significant benefits to the UQ Library Learning Resources Service, eliminating much of the manual effort currently required in the copyright reporting process.

Another feature of the Digitisation Content module is the option for bulk 'rollover' of digitisations for each learning resources list, which automatically communicates all digitised files that were connected to a list when duplicated in the Reading List module rollover process. This saves time for library staff, and provides instant access to readings on lists to end users. Issues arising from this feature include making available digitised readings that may not be needed for the current time

period, and there potentially limiting the availability of readings that teaching staff would like to use.

The TADC module also provides useful reporting, in addition to the CAL Census Report, for all requests, and all courses with requests. These reports can be used for targeted collection development activities such as seeking eBook resources for purchase to deliver online content, or online journal subscription and purchase options. Further useful applications for reports include workload management predictions, as well as detailed views of workload for specific courses in comparison to student enrolments.

While there are many benefits and features of the application, it should be acknowledged that difficulties have also been encountered. With the introduction of any technology, both technical and administrative hurdles need to be overcome. The application is a dynamic system, with both modules evolving and undergoing frequent updates to improve functionality. In response, the Service regularly reassesses processes and workflows.

Analytics

The growing demand for accountability affects libraries, including their delivery of learning resources. Prior to the implementation of Talis Aspire, UQ Library had very limited access to analytics on the usage of learning resources. Some limited usage could be assumed by the number of times print items linked to reading lists were borrowed. It was not possible for the Library to determine usage of reading lists as a whole, and there was no way to measure the impact or value of the work carried out by the Library in supporting teaching and learning. Talis Aspire provides analytics through the Reading List module and the Digitised Content module as well as Google Analytics.

The types of analytics available from Talis Aspire include usage statistics of reading lists and individual resources, as well as statistics useful for internal management of reading lists and measuring engagement such as the number of users who have created a profile account and the number of lists for each School.

The Dashboard feature provides real time analytics for an individual reading list. The goal of this feature is to provide decision-making information, for libraries in collection-development management activities, and for teaching staff in measuring student engagement. Teaching staff are able to identify and react to usage trends in real time throughout the teaching period, prompting further student engagement with resources as assessment pieces draw closer and as low usage is noted for specific important items.

Features of the Dashboard include access to page views, number of clicks on individual items on a reading list and the total number of student annotations. These results can also be filtered to display usage in a customised date range. The Dashboard offers a visual representation of resource usage; however, is only

available to List Owner or List Publisher. As a result, the usefulness of the Dashboard feature is currently limited.

Similar to the Dashboard feature in the Reading List module, the Digitised Content module provides real time analytics on requests. Snapshots are available across the entire system for all requests status types. Usage statistics are also available on all 'Live' requests with pre-set time filters of previous year, previous 90 days, previous 30 days and previous 7 days. Each pre-set time filter offers a snapshot of the top 25 performing requests by views, downloads or prints, with the option of displaying usage statistics for all requests.

Talis Aspire also provides analytics via Google Analytics, capturing visitor traffic figures to UQ Library learning resources sites. An overview of these analytics is provided via Talis Aspire pre-set dashboards for traffic and visitors, with information regarding top 'performing' sites, such as most-accessed reading lists and individual readings, and also for profiling users of the sites, with information regarding geographical access locations, devices and operating systems used. Further drill down of the analytics is possible for gauging reading list performance and user interactions.

Findings

As previously mentioned, the Library was restricted in its ability to provide usage statistics for reading lists prior to the introduction of the new system. Consequently, academic staff were unable to demonstrate evidence-based support of teaching and learning and proven use of resources added to reading lists. Initial reports from Talis Aspire and Google Analytics already clearly demonstrate the student usage of reading lists provide by UQ Library.

Reports from Google Analytics, comparing Semester 1 2014 (3/03/2014-28/06/2014) to Semester 1 2015 (2/03/2015-27/06/2015), show an increased use of library reading lists since the implementation of Talis Aspire. It is anticipated that a comparison of Semester 2 2014 and Semester 2 2015 will provide clearer analysis of user engagement with the inclusion of additional analytics, including page views and bounce rates.

The Visitor Dashboard report (Figure 1) shows a 27.53% increase in visitors to UQ Library's reading lists from Semester 1 2014 to Semester 1 2015. This is an indication that more students have engaged with reading lists and library resources this past semester compared to the previous year.

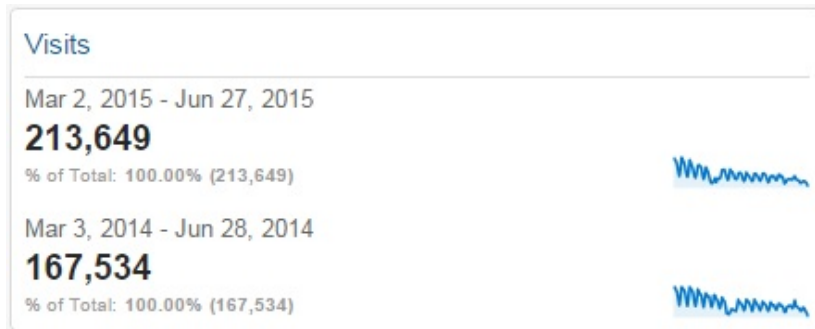


Figure 1 Visits

Unique visitor figures reveal the numbers of new visitors to the site. The climb in unique visitor sessions (Figure 2) from Semester 1 2015 to Semester 1 2014 shows a 28.24% increase in new visits to site.

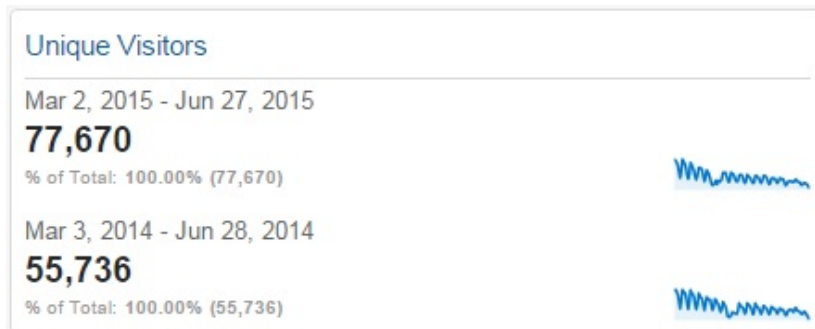


Figure 2 Unique visitors

Google Analytics shows an increase in numbers for returning visitors and new visitors. During Semester 1 2015, there was a 24.81% increase in returning visitors to the reading lists (Figure 3). Along with this was a 33.41% increase in new visitors (Figure 3). This increase reveals that students are accessing reading lists and library resources.

New vs Returning		
User Type	Sessions	Pages / Session
Returning Visitor		
Mar 2, 2015 - Jun 27, 2015	143,111	4.71
Mar 3, 2014 - Jun 28, 2014	114,661	5.77
% Change	24.81%	-18.41%
New Visitor		
Mar 2, 2015 - Jun 27, 2015	70,538	3.29
Mar 3, 2014 - Jun 28, 2014	52,873	5.15
% Change	33.41%	-36.16%

Figure 3 New vs returning visitors

The visit timeline provides an overall comparison of user sessions throughout the duration of the semester showing Semester 1 2014 and Semester 1 2015 (Figure 4). The peaks early in the semester reflect the expected usage patterns of students.

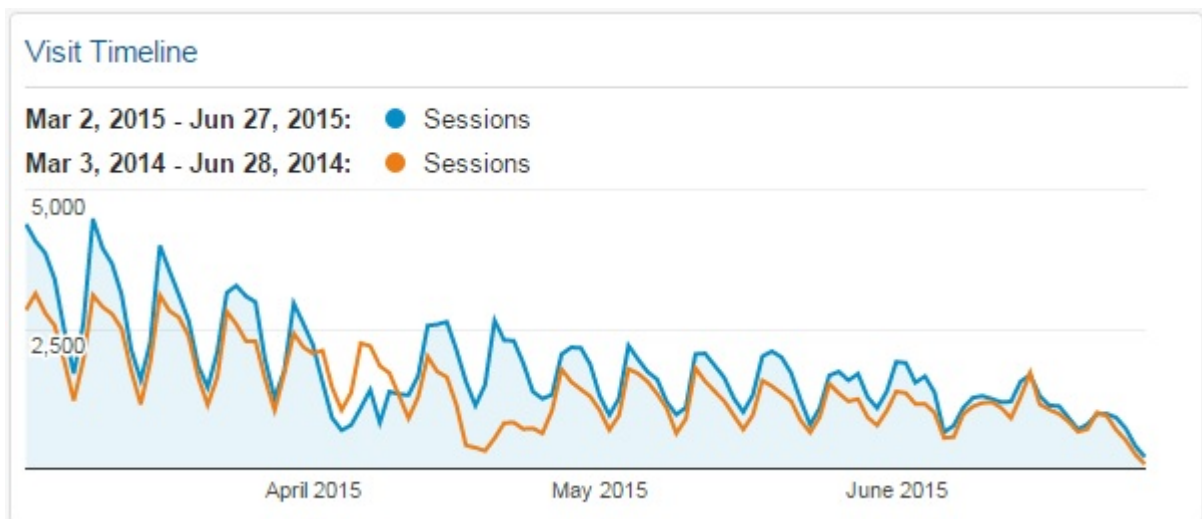


Figure 4 Visit timeline

Google Analytics statistics on user engagement provides the number of sessions of users on UQ Library learning resources pages, and the length of these session times (Figure 5).

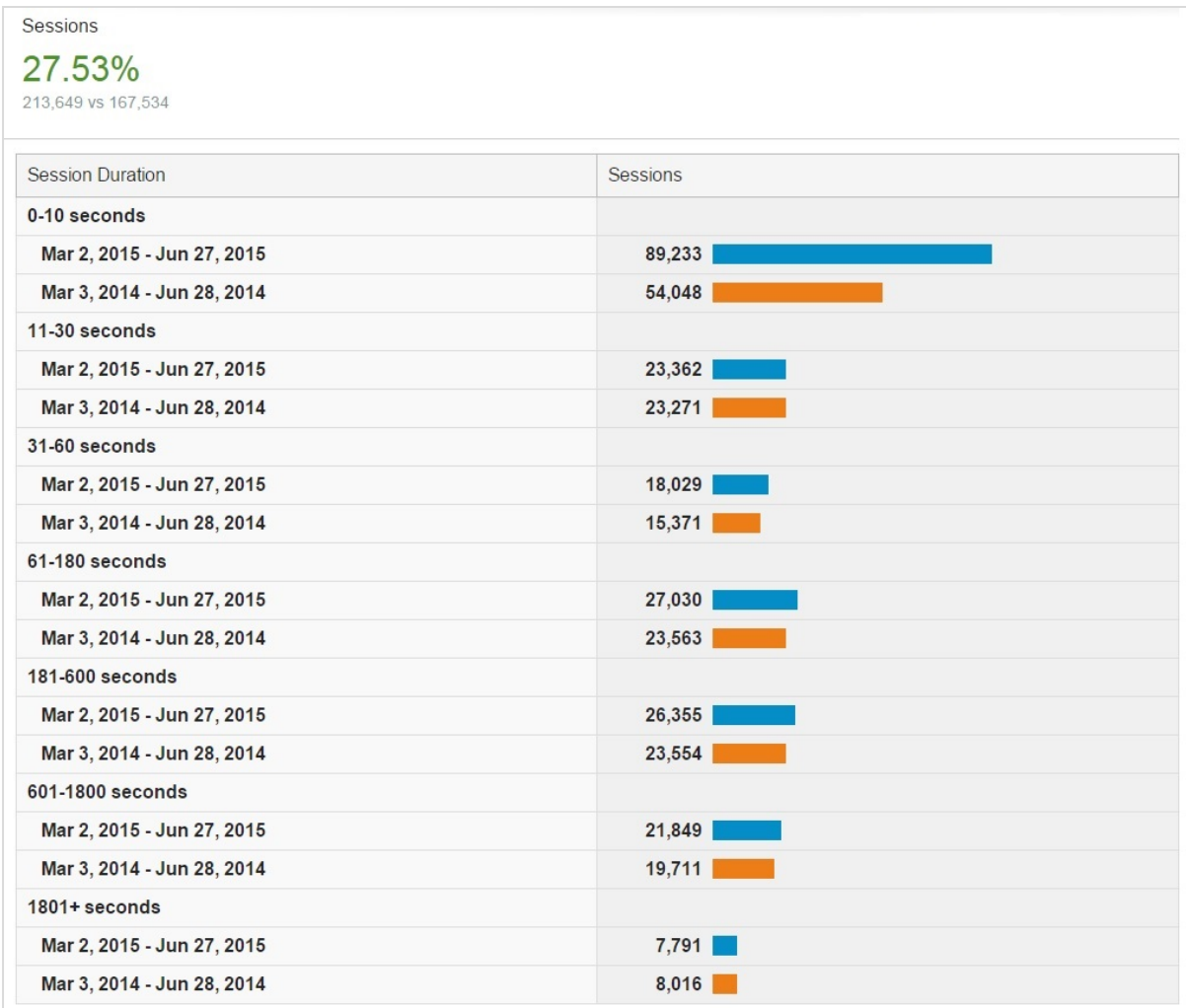


Figure 5 User engagement

Information can be extracted from Google Analytics about the number of user visits to individual reading list pages. These figures can provide data to support engagement with reading lists. Figure 6 shows the Top 10 reading lists for courses administered at the UQ St Lucia, Herston and Gatton campuses. The chart provides comparison between semesters in relation to access of reading lists and enrolment figures respectively.

Increased use of the new application since implementation is evident. There is no comparison to the previous system used to create reading lists, as data was unable to be extracted in regards to usage. The increase is anticipated to continue as coursework students use the system and take advantage of features.

The availability of usage analytics is useful to present to teaching staff to ensure further academic engagement with reading lists. Early indications show that teaching staff are interested in usage statistics and these will be a beneficial to academics wanting further student engagement with reading lists. Teaching staff play an integral role in encouraging student engagement with the application.

Future directions

UQ Library is currently proceeding with several developments to maximise the benefits of the Talis Aspire application.

Initial steps have been taken to collaborate with teaching staff to create and manage their own reading lists. During Semester 1 2015, a small trial was conducted with teaching staff at UQ. A number of teaching staff from a range of Schools from across the University were invited to participate in the trial. They were chosen according to a range of criteria, including being active users of the Learning Resources Service, who maintained reading lists that were well accessed by students.

The trial has demonstrated that there is interest from teaching staff in creating and maintaining their own reading lists. It has also shown that the majority of teaching staff prefer to contact the library to make changes to their reading lists, but are interested in the Dashboard features made available to them during the trial.

Anecdotal feedback has been sought from a small number of teaching staff who participated in the trial. Academics commented on ease of use in regards to making their own changes to reading lists in Talis Aspire. The fact that academics can make changes quickly and at the time of need is considered to be positive. The trial found that teaching staff actively encouraged student use of the Talis Aspire reading lists during the trial by placing links in course Blackboard sites, and talking about the reading lists in lectures.

Further results of the trial showed that teaching staff regularly checked the Dashboard feature throughout the semester to ascertain student engagement with readings. Teaching staff feedback was highly positive regarding access to the reading usage data, and commented that this feature was useful to encourage students to engage with specific readings. Academics also remarked that the data would be useful for developing reading lists in the future.

Overall, teaching staff involved in the trial indicated that the Talis Aspire application met their needs, was convenient when adding readings or making changes to Learning Resource lists, and was beneficial for both themselves and students.

To date, UQ Library has not promoted the new application to the wider university beyond the scope of the trial. Further work is needed to develop a more strategic approach to promotion of the Talis Aspire reading lists to students and teaching staff.

In a step towards further university-wide integration, the Service has scheduled an upgrade, which will allow learning resources to be embedded within UQ's virtual learning environment, Blackboard. Links to learning resources lists are currently already embedded within Blackboard; however, this new development would enable a complete view of the list contents. This upgrade is expected to deliver higher engagement levels from both students and teaching staff. Students will experience a single point of delivery and consistency in their reading lists delivered by a course, and potentially across many of their courses within the lifecycle of their degree. Teaching staff will also be able to edit the learning resources lists from within

Blackboard, and decide on the presentation of the list by separating independent sections of readings to be situated within Blackboard according to their relevance.

Conclusion

Significant changes have occurred within the Learning Resources Service over several years. The introduction of new technologies and changes to staffing service models has contributed to the continued evolution of the Service. Findings demonstrate increased access to reading lists since the introduction of Talis Aspire. The availability of analytics lends evidence in support of the value the Library provides in regards to learning resources and ultimately the overall performance of students. Although the application is administered by the Library, the processes and analytics have university-wide relevance. The Service will continue to evolve with future developments, and with an ever-present focus on user engagement in support of teaching and learning.

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