



# Online reading lists: a mixed-method analysis of the academic perspective

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## Abstract

Reading list systems are widely used in tertiary education as a pedagogical tool and for tracking copyrighted material. This article explores the make-up of reading lists across a whole university. We investigated the experience of academics and librarians when creating reading lists. A mixed-method approach was employed in which we performed a transaction log analysis on reading lists at a single university, from 2016 to 2020. A questionnaire was then answered by both academics and academic liaison librarians about their experience with reading lists. The results of our analysis found that uptake of reading lists varies widely between different academic disciplines. Academic engagement with reading lists was found to show only incremental growth over time, and overall satisfaction by academics with the reading list system was low. We explore implications for reading lists implemented through digital Libraries and recommend developing discipline-specific support to increase reading list numbers and to integrate pedagogical features to increase academic buy-in.

**Keywords** Online reading lists · Digital library · Tertiary education · Academic engagement · eBooks

## 1 Introduction

Reading lists (RLs) have long been part of academia [1, 2] and may provide pedagogical ‘scaffolding’ in which academics offer support to students through signposting and rich annotation on required readings [3]. They thus have a critical role to play in transforming students into autonomous learners [4]. Educators have noted the opportunity for managing and tracking reading materials in digital libraries [5, 6, 24] and for integrating digital libraries in academic learning environments [7, 8, 23, 25]. In the last decade, Online Reading List Systems are often integrated into an academic library’s offerings [9, 10], and academics are supported by academic liaison librarians in creating RLs. Copyright Licensing New Zealand

[11] requires all universities in New Zealand to provide software solutions to enable electronic reporting on copyrighted material. To meet these reporting obligations with CLNZ, all eight New Zealand universities adopted RL systems in 2015.

Previous work has identified the need for a more detailed examination of RL systems, particularly in relation to enhancing academic engagement [12–14]. In this article, we explore RLs creation across the University of Waikato (UOW) and seek answers to three specific research questions:

- RQ 1: How many RLs were created each year within each faculty?
- RQ 2: What are academics and librarians’ experiences with RLs?
- RQ 3: What materials are included in RLs?

The remainder of the article is organized as follows: The following section gives an overview of related work on RL systems. We then explain our study method, the results of our study and data analysis. In the discussion, we compare our study insights with those of related work. The final section presents insights and recommendations from our study.

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## 2 Literature review

The use of RLs in tertiary teaching across individual universities [1, 14, 15] as well as within parts of a university [9, 12, 16–18] has been well reported. A number of studies include a longitudinal approach. Krol [9] reported that the University of West London saw an increase in RLs from 4% in 2013/2014 to 100% of courses by 2018/2019. Few other studies have reported 100% saturation of RLs uptake by academics across a teaching division let alone an entire university. Taylor [18] found that at the University of Worcester 95% of modules had RLs in 2018/2019, after first introducing RLs in 2014/2015. More typically, Beasley's [16] study at the University of Auckland found that RLs creation varied among faculties due to their disciplinary needs. The willingness of academics to engage in RLs creation seemed to vary across the different studies. Cross [13] at Nottingham Trent University highlighted that staff time constraints were a key barrier to the uptake of the RLs at their institute. Beasley [16] found that familiarity with the system, staff time constraints, and perceived usefulness of the system were also hindrances at the University of Auckland. Krol [9] discussed resistance and lack of interest by academics. Despite RLs being created for all courses with the help of library staff, the academics' engagement with the RLs creation remained low due to a cited lack of time [9].

Most studies identified significant hurdles for academics to overcome in order to usefully engage with RL systems. While Zhu [14] found that the academics valued the facility of the sharing of copyright material via the RLs, 40% were dissatisfied with the overall RLs' functionality, stability and ease of use. Consultations with staff at the University of Manchester identified the need for improved functionality of the system as well as integration into the learning management software, better support for users, and marketing to their users of the potentials and capabilities of the system [15]. Neil and Masto [17] found that academics at the Dublin Business School wished for better integration of RLs with their learning management system and also identified time constraints as the main barrier for academics to use the RLs. Other factors highlighted as hindrances to RLs uptake were the discipline and lecturing experience of the academics. Taylor [18] agreed with her colleague Devine [19] in arguing that the RLs needs to go beyond being a repository of teaching materials but should become a teaching tool in its own right. However, in what way RL system and a learning management system would integrate has not been addressed.

Academics also reported concerns that the RLs may not provide enough cost benefits for them and their students. Brewerton's [1] study at Loughborough University found that some academics were not convinced that their efforts in maintaining the RLs were appropriate in comparison with the perceived benefit to the students. Cameron & Siddall

[12] even noted concerns voiced by academics about RLs effectively "spoon-feeding" students and observed a lack of effective communication between librarians and academics.

The content of RLs is reported sparingly [13]. The literature also touches on the types of content found in RLs [9, 12] and where it has, studies do not distinguish between digital and print material. Cameron and Siddall [12] found that books contributed on average 74% of RLs material at the University of Northampton. While 13% of these books were available as eBooks, only 3% were labeled as such. Krol [9] found that books and eBooks were included in 96% of all RLs at the University of West London. Librarians at Loughborough University gave anecdotal evidence that engineering RLs were typically short and comprised mostly books, whereas humanities lists were longer and used more articles [1]. We observe that many of the available publications are reports reflecting on an institute's journey and did not use log analysis. Table 1 provides an overview of the discussed studies on academics' use of the RL systems. While eight out of the nine studies focused on academic experience with RL systems, only two studies used a detailed log analysis. Of these two, Beasley [16] focused predominantly on a single semester. Krol [9] covered a four-year period (2016–2019) but limited the study to a single faculty (Computing and Engineering). The generalizability of their results is therefore limited. In addition, only four of the nine studies covered all faculties at universities. Finally, only two studies included librarians' views, with Cross [13] exploring the technical challenges, and Beasley [16] limiting the focus to two faculties. Therefore, integration of the views of academic liaison librarians' experiences with RLs remains open.

## 3 Method

This section describes the study context, method, data collection, data preparation and preprocessing for analysis. Our study employs a mixed-method approach [20] including a transaction log analysis and two questionnaires.

### 3.1 Institutional context

The UOW has 13,076 students and 649 academic staff [21]. Our study was conducted across all eight faculties, including Art and Social Sciences (FASS), Education (FEDU), Science and Engineering (FSEN), Waikato Management School (WMS), Maori and Indigenous Studies (FMIS), Computing and Mathematical Sciences (FCMS), Health, Sport and Human Performance (FHSHP) and Law (FLAW) (see "Appendix A" for particularities of the each of faculty). In addition, six academic liaison librarians participated. Academic liaison librarians work with academics to provide individual assistance for teaching and research. They also

**Table 1** Summary of the user experience on RL system studies

Author	Aim of the study	Specific focus			Methodology			Participants				
		Users' general experience of Use of RL Systems	Use of specific function/s of the RL systems	Implementation challenges	Method	Questionnaire	Interviews/ focused groups	Represents all faculties	Represents selected faculties/ programmes	Academic staff	Library staff	Students
Brewerton [1] Loughborough University, UK	To understand how Reading Lists are perceived by both students and lecturers	✓	-	-	-	-	✓	✓	✓	✓	✓	✓
Nottingham Trent University, UK	To review the key components of the Introduction of a new resource list management system	-	-	✓	-	-	✓	✓	-	✓	✓	✓
Beasley [16] The University of Auckland, NZ	Explore the factors that affected the academic engagement with the implementation of the Reading List systems	✓	-	-	RL reports For Semester 1 2016	-	✓	-	Faculty of Education and Social Work faculty of Engineering	✓	✓	-
Neill and Musto [17] Dublin Business School, Ireland	Explores faculty perceptions of the Reading List Systems	✓	-	-	-	✓	✓	-	Business, Art and Law	✓	-	-

Table 1 (continued)

Author	Aim of the study	Specific focus			Methodology			Participants				
		Users' general experience of Use of RL Systems	Use of specific function/s of the RL systems	Implementation challenges	Method	Questionnaire	Interviews/ focused groups	Study population	Represents selected faculties/ programmes	Academic staff	Library staff	Students
Cameron and Siddall [12] The University of Northampton, UK	Access the academics' experience of the Reading Lists and Ordering Process	✓	✓	-	-	✓	✓	-	Health, Education, Business, Social Sciences and the Arts	✓	-	-
Zhu [14] Auckland University of Technology, NZ	Explore factors Influencing Lecturers' Intention to Use Reading Lists	✓	-	-	-	✓	-	✓	-	✓	-	-
Taylor [18] The University of Worcester, UK	Examines the concerns of academics about Reading list systems	✓	-	-	-	✓	-	-	Postgraduate Certificate in Learning and Teaching Higher Education	✓	-	-

**Table 1** (continued)

Author	Aim of the study	Specific focus			Methodology			Participants					
		Users' general experience of Use of RL Systems	Use of specific function/s of the RL systems	Implementation challenges	Method	Questionnaire	Interviews/ focused groups	Study population	Represents all faculties	Represents selected faculties/ programmes	Academic staff	Library staff	Students
Krol [9] The University of West London, UK	Determine to what extent students and academics are engaging with the Reading Lists	✓	-	-	Log analysis and period covered	✓	✓	-	Represents all faculties	School of Computing and Engineering	✓	-	✓
Walsby [15] The University of Manchester, UK	Implementing a Reading List strategy	✓	-	-	RL reports for period of 2016–2019	✓	✓	✓	Represents all faculties	-	✓	-	-

**Table 1** (continued)

Author	Aim of the study	Specific focus			Methodology				Participants			
		Users' general experience of Use of RL Systems	Use of specific function/s of the RL systems	Implementation challenges	Method	Questionnaire	Interviews/ focused groups	Represents all faculties	Represents selected faculties/ programmes	Academic staff	Library staff	Students
Our study	Explores the make-up of Reading Lists across a whole university and the experience of academics and Librarians when creating RLs	✓	✓	-	Log analysis and period covered	Questionnaire	Interviews/ focused groups	Represents all faculties	Represents selected faculties/ programmes	Academic staff	Library staff	Students
		✓	✓	-	RL reports for period of 2016–2019	✓	-	✓	-	✓	✓	-

provide individual assistance on reference services, system support services and copyright tracking. To make the services more decentralized, each faculty is assigned with two academic liaison librarians.

Waikato Reading Lists (WRL) are typically created for each course instance, being assigned to different semesters and years, such as Summer Schools S and T, Semesters A and B, whole year Y courses, and Semester C (all other periods). Most students attend Semesters A and B, with fewer in Summer Schools S and T. Y and C are rarely used, mostly for postgraduate studies.

### 3.2 Study method

The first phase of our mixed-method study consisted of a transaction log analysis [22] of WRL creation over five years (covering January 2016–December 2020). The second phase of the study used online questionnaires for academics and librarians, which were designed based on the findings of the first phase of the research. The transaction logs recorded actual behaviors of academics' in RLs creation at the University of Waikato. We used these logs to identify trends and patterns in user behavior. Some of the insights we derived through these trends needed to be confirmed and clarified through insight from users. Our questionnaire aimed to explore the users' reasons for the trends we had been able to identify from the log analysis. Our questionnaire was designed to gather data on academics' and librarians' experiences and opinions of use of reading lists based on our insights from the log analysis as well as unanswered questions about reading list use. Following ethics approval, the online questionnaire was emailed to selected academics and the academic liaison librarians. We here describe the data collection process for the two phases of our study.

#### 3.2.1 Phase 1: log analysis

The raw data from the WRL transaction logs (including information about the lists creation and content) were automatically processed and collated into tables of summary data. Any RLs that were deleted from the system do not appear in the logs. Table 2 describes the preparation of the transaction log data for analysis.

#### 3.2.2 Phase 2: questionnaires

The study population for the questionnaire consisted of the UOW academics and the librarians who were involved with WRL as list creators in at least one case; 305 academics were identified. The questionnaires comprised close- and open-ended questions and were constructed under three main themes (see "Appendix B"):

**Table 2** Preprocessing steps for analysis

Step	Description
Step 1	Removed all <i>RLs</i> created in 2015 because Summer School 2015 lists were created as part of the pilot phase and <i>RLs</i> were fully published for teaching in 2016 Semester A onwards
Step 2	Removed all <i>RLs</i> whose status was indicated as "Draft". The remaining <i>RLs</i> (Published and Archived) were used for teaching at least once
Step 3	Removed all duplicate <i>RLs</i> to prevent redundant counting
Step 4	Introduced a column labeled "Faculty" to identify the <i>RLs</i> created by each faculty

- Experience of the WRL setup
- Experience in linking an eBook or other teaching materials in WRL
- Experience of the ongoing use of the WRL

The electronic questionnaire was emailed to the 305 academics in June 2020; the survey ran for two weeks. A total of 73 replied to the questionnaire within the stipulated time period. This sample (73 respondents of 305) represents a response rate of about 24%. For an online survey of this kind of domain, conventionally, a response rate of 20–30% is considered a good result and is similar to other surveys in this field. In addition, 10 academic liaison librarians were identified based on their departmental responsibilities, who also received a customized questionnaire (see "Appendix C"). A total of 6 replied to the questionnaire within the given two-week period.

## 4 Results and analysis of transaction log data

This section presents the results of our log analysis. *RLs* may be *newly created or rolled over* (i.e., re-published year on year). *RLs owners* are then either *new owners* or *owners of rolled-over RLs*.

### 4.1 Reading lists over time

Figure 1 shows the total number of *RLs* created across all eight faculties. The overall number shows an upward trend (except for the sudden decline in 2020). We believe the decline in 2020 was predominantly due to the move to online teaching during COVID lockdown in New Zealand (taking full effect in B Semester 2020).

To further explore this behavior, we analyzed the *RLs* in each faculty. We found that *RL*' numbers were higher in the four faculties FEDU, FASS, FSEN, WMS (~ 100 *RL* per year, see Fig. 2), compared to the other four faculties FMIS, FCMS, FHSHP and FLAW (less than 30 *RLs*).

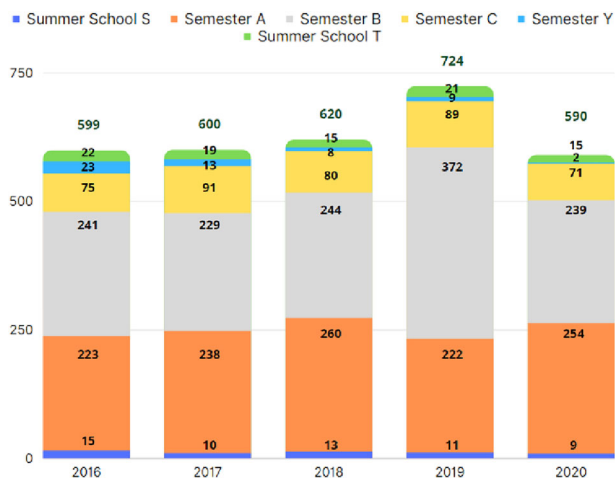


Fig. 1 RLs active in each semester grouped by years

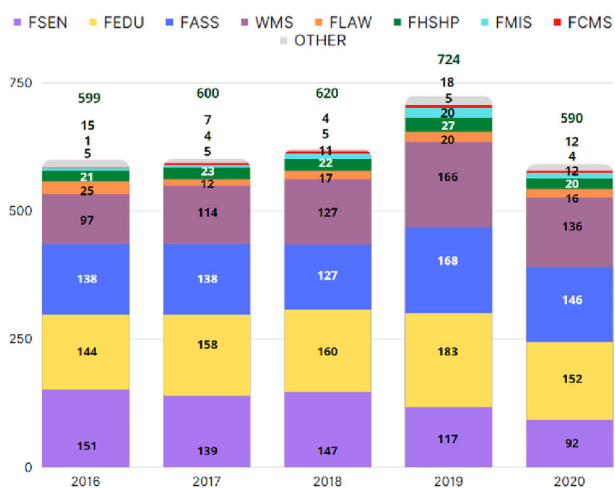


Fig. 2 RLs created by each faculty grouped by years

The number of RLs evaluated in relation to the number of courses offered within each faculty appears in Fig. 3. Fluctuating numbers of RLs may therefore be explained by changing numbers of courses offered.

A comparison across faculties shows the following percentage of courses with RLs: FCMS 3%, FASS 30%, FLAW 31%, FMIS 37%, FSEN 47%, WMS 55% FEDU 63%, FHSHP 63%. We particularly observe that FCMS has a very low RLs percentage (e.g., 2% in 2020). While the faculty offered a considerable number of courses (170 in 2020), only a few staff (3 of 50+ in 2020) were engaged with the creation of 4 RLs (see Fig. 4). The reason may be that FCMS does not use many copyrighted materials and the WRL thus does not cater to the disciplinary needs of FCMS.

Overall, RL numbers at the UOW rose in small increments over the five-year period, despite variation in the contribution of each faculty.

We identified two causes for high RL numbers in faculties: the overall number of courses offered and the number of academics engaged with WRL. Faculties that have many RLs often had many academics involved in creating RLs (e.g., FEDU see Fig. 4). For example, FASS added a considerable number of new RLs each year, involving many academics (60–75).

Untypically, only a few staff (between 2 and 4) were involved in creating the large number of RLs in FSEN, which turned out to have been created by librarians. After an initial push in which 150 RLs were created, most RLs were being rolled over each year.

### 4.2 Items in reading lists by type

Figure 5 shows that the total number of items in the WRL increased gradually each year. We observe that at the beginning (2016–2017) book/book chapters contributed far more items than the other two categories (43% in 2016 and 44% in 2017). However, by 2018/2019 articles/journals had risen to about the same proportion, and by 2020 they had become the largest proportion of linked resources (43% of RLs content in 2020).

We further explored the proportion of online and physical items included in the RLs (see Fig. 5). We observe that the growth in RLs resources was mainly due to the increased inclusion of online resources over the five years. Taken together, online resources in RLs increased from 6791 items (54% of total RLs content) to 16,072 items (69% of all RLs content), while physical resources increased from 5903 (46%) items to only 7324 (31%).

When comparing the items linked in RLs from different faculties (see Fig. 6) in 2020, we observe field-based differences in the RLs composition. One group of faculties mostly linked articles/journals (FLAW 55%, FHSHP 55%, FEDU 52%, WMS 46%); another group had mostly books/chapters (FSEN 86%, FMIS 55%, FASS 51%). Most prominent here is FSEN with 86% books/chapters. Finally, FCMS was the only faculty to mainly link other items (55%).

When comparing the RLs linking of paper-based items (physical) and the online/digital material for each faculty in 2020, the majority of faculties is predominantly including online/digital material (FHSHP 77%, WMS 76%, FCMS 72%, FLAW 71%, FEDU 71%, FASS 62%, FSEN 58%), with FMIS being the only faculty with only 48% of online/digital material.

When analyzing the format of items included in RLs, we find that all faculties used online/digital articles/journals more often than the physical version (FSEN 97%, FASS 97%, FEDU 93%, FCMS 63%, WMS 98%, FMIS 77%, FLAW 74%, FHSHP 99%). Similarly, other items were predominantly digital (72% to 97%). The picture is more nuanced



**Fig. 3** UOW papers offered in 2016–2020 with and without RLs, sorted by faculties. *Note:* At the UOW, term ‘Papers’ refers to the subject, course or a module

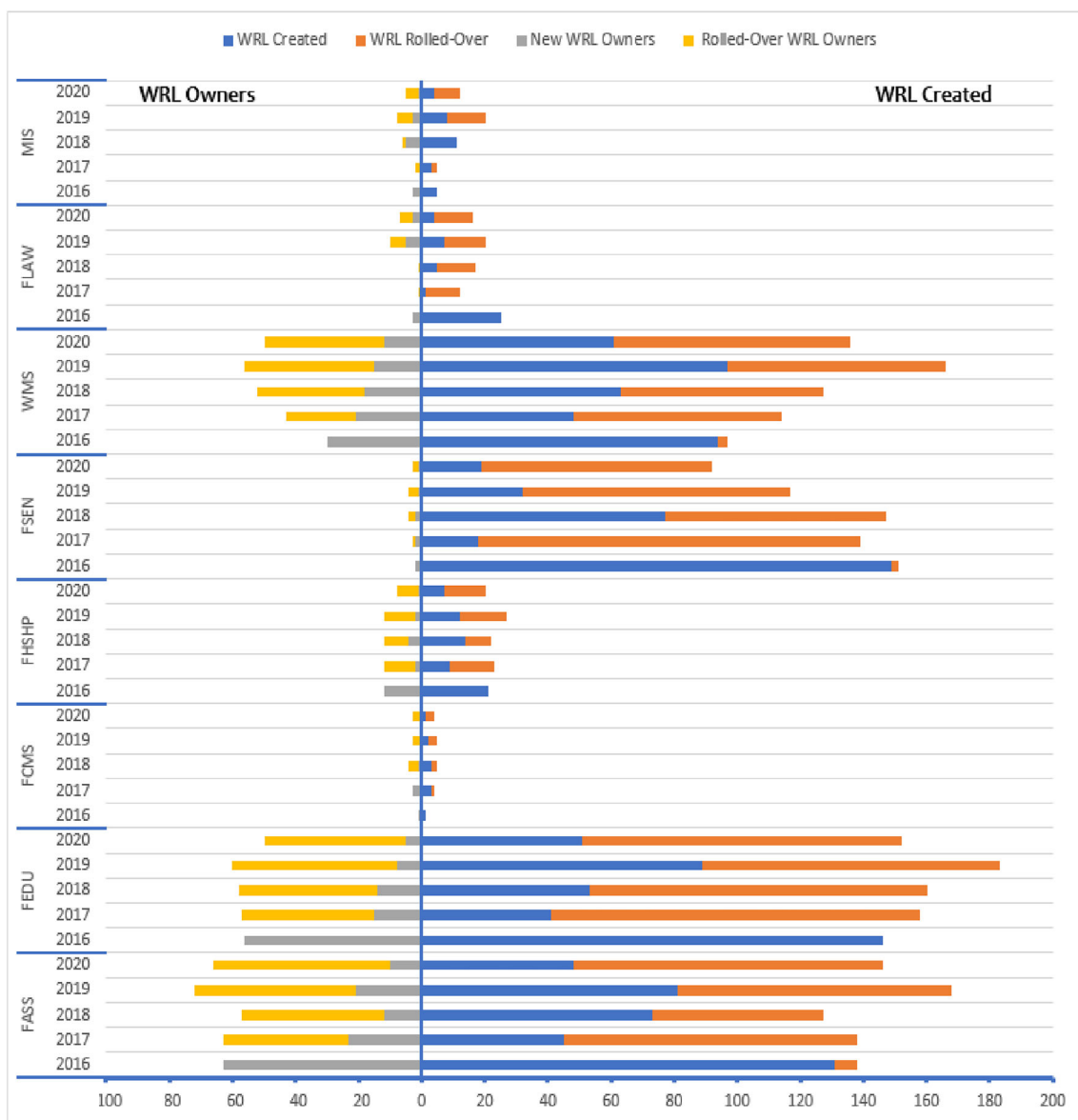


Fig. 4 WRL created overtime by academics

for books/chapters: most faculties use predominantly physical books/chapters (FLAW 81%, FMIS 74%, FASS 66%, FEDU 65%, WMS 61% and FHSHP 59%), and only two faculties use predominantly digital books /chapters (FSEN 52%, FCMS 70%).

### 5 Results and analysis of questionnaires

The questionnaires investigated the experiences of academics and academic liaison librarians, respectively, with WRL

under three sections: the WRL setup, linking an eBook or other teaching materials, and ongoing use of the WRL. We received responses from 73 participants, representing 7 of 8 faculties and thus almost a third of the total number of academics who were invited to participate (see Fig. 7). We did not receive an equal number of participants from each faculty. The faculties were represented as follows: FASS (24), WMS (18), FEDU (15), FLAW (5), FCMS (4), FMIS (4), FHSHP (2) and FSEN (0). In addition, one academic participant did not indicate their faculty. Six of 10 librarians responded to the questionnaire.

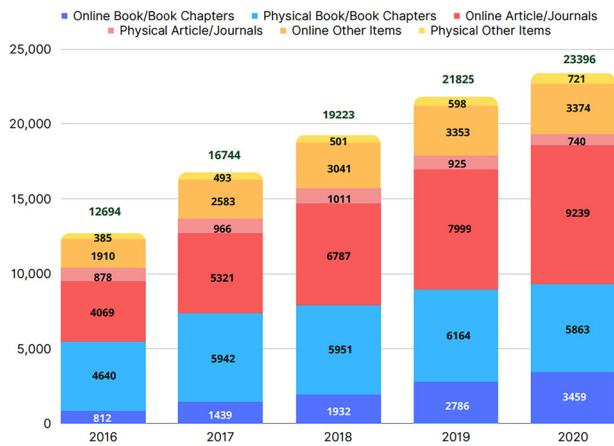


Fig. 5 Total number of items in the WRL (2016–2020)

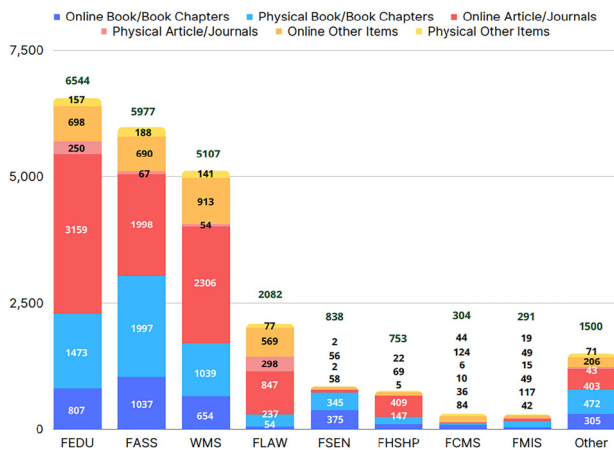


Fig. 6 Number of items in faculty RLs 2020

## 5.1 Academics' and librarians' experience with the WRL setup

### 5.1.1 Use and structure of reading lists

Figure 8 shows that 36 of 73 (47%) academic respondents sought the help of others when setting up the WRLs, and about one-third of all respondents (24 of 73, 33%) had someone else setting up the RLs for them (more than one response was permitted).

Figure 9 summarizes the kind of help the respondents sought when setting up the RLs, which was gathered through an open-ended question. Eight responses were identified as irrelevant to the question asked. Out of all the valid responses, help-seeking for the initial setup of the RLs was the most common factor for most of the faculties. We observe that the three highest factors (initial setup, uploading materials, and linking materials) were the basic functionalities of the WRL.

All six academic liaison librarians acknowledged that they set up RLs on behalf of academics (see Fig. 10). When

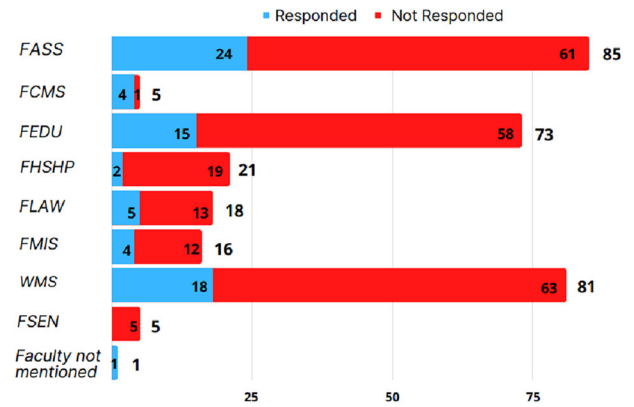


Fig. 7 Respondents (academics) sorted by faculty

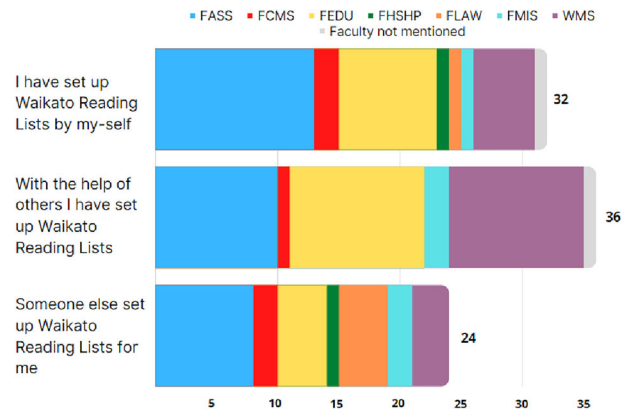


Fig. 8 WRL set up by the academics (n = 73)

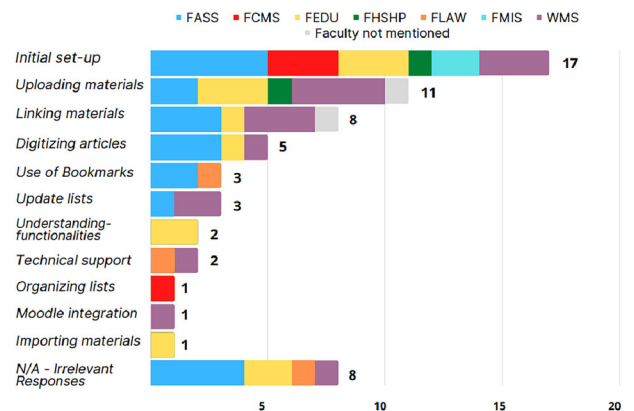
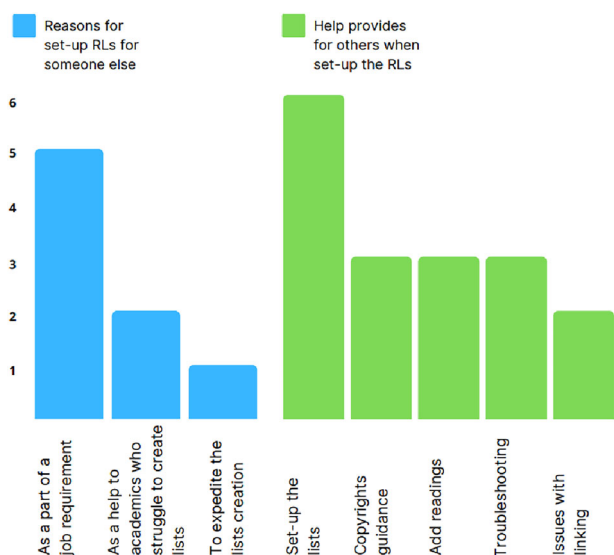


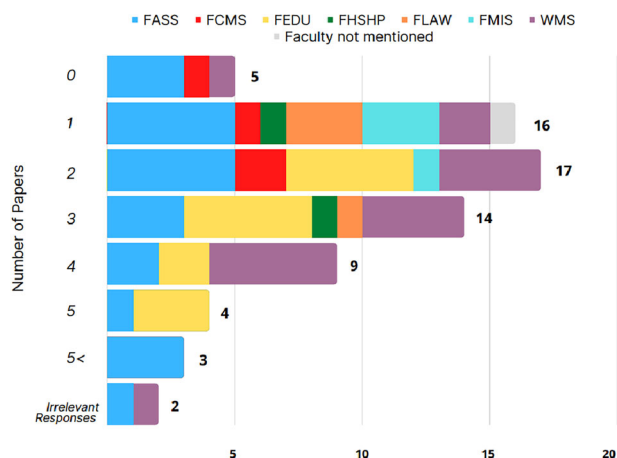
Fig. 9 Help sought by the academics (n = 53). Note: Respondents are permitted to express more than one reason

comparing the help provided by the librarians to academics, we see tasks such as copyright guidance, linking of material, troubleshooting and guidance for linking online material such as eBooks and chapters.

Academics were asked how many of their courses used rolled-over RLs (i.e., RLs that were used in multiple years), see Fig. 11. The majority (63 of 68) had used rolled-over RLs



**Fig. 10** Reasons and help provided to set up the WRL by the librarians ( $n = 6$ )

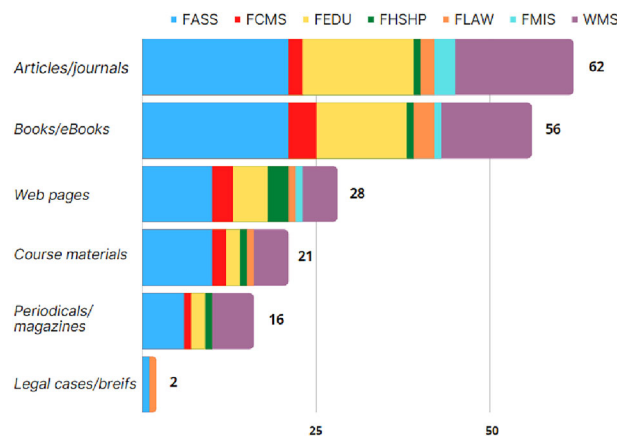


**Fig. 11** Number of courses taught by the academics which had RLs more than once ( $n = 70$ )

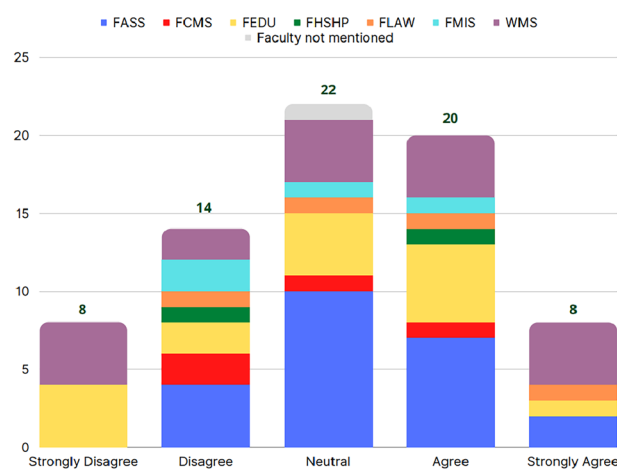
(on average 2.63 times) and only 5 had never rolled-over a RL. This continued use of RLs is higher in faculties such as FASS, WMS, and FEDU; we note that the same faculties also had higher numbers of overall RLs (see Fig. 3). This may indicate that academics who created higher numbers of RLs tended to engage with them in the following years as well.

We enquired about the types of materials that academics included in RLs (see Fig. 12). The majority of the respondents (62 of 73) indicated academic journals/articles as the most commonly included teaching material in the WRL, followed by books/eBooks (56) and web pages (28). We found that the top three resources were common across all seven analyzed faculties.

However, the most-often mentioned RL materials were different across faculties, with *academic journals/articles*



**Fig. 12** Teaching materials included in the RLs by the academics ( $n = 73$ )



**Fig. 13** Setup of the RL is clear and easy to interact with—academics rating ( $n = 72$ )

being dominant for academics from FASS, WMS, FEDU, and *scans books/eBooks* being prominent for academics for FLAW and FCMS.

Surprisingly, *web pages* were the most often mentioned resource for FHSHP, but the respondent number was very low. The inclusion of such materials as *web pages* shows that WRL contains material in addition to the legally required copyrighted publications.

### 5.1.2 Ease of interaction with reading list setup

We sought feedback on the academics' experience of setting up WRLs and received a mixed response (see Fig. 13). Twenty-eight of 72 participants agreed with the statement that WRLs are clear and easy to set up, 22 were neutral, and 22 disagreed. We did not identify any particular patterns across the faculties. Fifty-five participants provided further reasons for their feedback. Twelve of 55 participants commented that they found the *interface intuitive and easy to*

follow (as reasons for their positive rating). Forty-three of 55 respondents gave a variety of negative feedback such as *hard to understand*, *complicated and not intuitive/user-friendly* (27), *wanting more guidance on the process* (15), *difficult to link materials* (7), *time-consuming* (6), and *increasing the workload* (1).

Answering the same question, 3 of 6 librarians were neutral, 1 disagreed, and 2 (strongly) agreed. Even though librarians have more experience and training on the setting up of the WRLs, their overall feedback was not very positive and in line with the academics' views: *not intuitive* (2), *okay after some use/training* (2), *minimal integration into other university systems* (1).

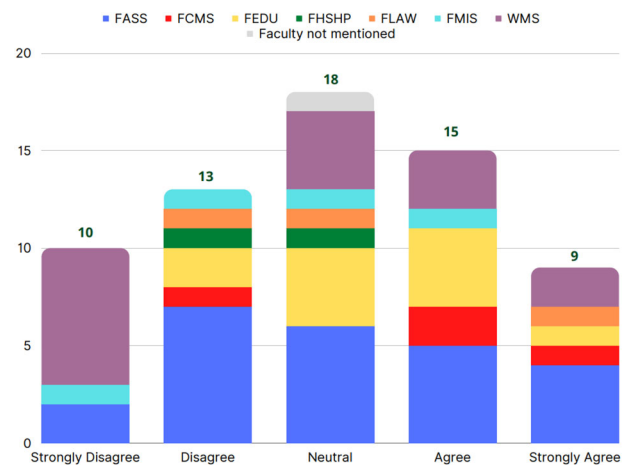
Final feedback on the setup of RLs was given by 38 participants, including the following points: *needing further guidance/struggling with the interface* (12), *appreciating the library support* (9), *not worth spending time / unnecessary burden* (5), *needs better interaction with Moodle and course outlines* (2), *easy to use and helpful* (2). In summary, we identify a need to improve the system's usability.

## 5.2 Academics' and librarians' experience with digital material in the WRL

Forty-three of 72 participants stated that they had successfully linked digital materials with their RLs. For the 29 participants who had not successfully linked digital material, we received the following further responses:

- *Participants had issues with using the RL system:* Nine participants did not know *how to link digital resources with the RLs* though they were aware that the functionality was available. Other reasons provided further indicate the *need for improving the linking process, such as confusion about the linking process* (9), *preference for other methods* [of providing material] (8), and *difficulty of the linking process* (4). Six academics expressed a *lack of awareness for the functionality of linking eBooks* (6).
- *Participants chose not to link digital material for students in their RLs:* Reasons given included: *not using digital material in the course* (5), *preference for print material instead* (2). Some access issues were mentioned (e.g., material not provided by the library). One participant said they circumvented the RL system, by a link[ing] directly to an eBook itself, not [via] the RL software (1). Another participant reported that a librarian had linked eBooks and other teaching materials for them. Reasons unrelated to the RL system were also cited (e.g., do not remember).

These findings highlight the need for additional training and support by the academic library, as well as the need for an easier interface for linking digital materials. The six librarian



**Fig. 14** Linking an eBook with WRL is simple and clear—academics rating ( $n = 65$ )

respondents were all able to successfully link digital teaching materials with the WRL.

When asked about the ease of linking digital material with the WRL, a large group of academic respondents (18 of 65) remained neutral (see Fig. 14); 24 were (strongly) positive and 23 gave (strongly) negative responses. In addition, four of 6 librarians were neutral, and one agreed, and one strongly agreed to the ease of use of RLs. Thirty-two of the 65 respondents made additional comments regarding the ease of linking material. While 5 respondents found it easy to link material, 27 of 32 respondents gave a variety of negative feedback such as *difficult to understand* (10), *functions not memorable* (5), and specifics such as that it was *hard to decide which links to use* (3). Four of the 6 librarians provided further feedback about challenges, such as *inconsistencies with linking to resources at online publishers* (3), and the *difficulty of explaining the process* (1).

The feedback from academics and librarians indicates that there are intricacies in linking digital material (particularly eBooks) due to the heterogeneity of the data structure in provider websites.

## 5.3 Academics' and librarians' experience with using WRL

Twenty-seven of 71 respondents gave positive affirmation to the sentence 'The WRL made my job of teaching easier', 20 gave a negative response and 24 remained neutral (see Fig. 15).

From the detailed feedback of 52 participants, we see that 14 felt that WRL added to their workload without any perceived benefits for their teaching. Additional critical comments were the *lack of integration with other university systems such as Moodle or Course Outlines* (7), *doubts about actual usage by the students* (5), *difficulties in setup and use* (4), *time-consuming* (2). Positive feedback included the

advantage of having everything in one place (7) and reduced workload (3).

The advantage of having everything in one place of course requires the academics to include not only the required copyrighted material but all other reading material in the RLs (or to omit using non-copyrighted material).

When further examining the usefulness of WRL to academics beyond the support of teaching, 22 out of 71 respondents were neutral, and 39 were positive and only 10 negatives (see Fig. 16). Thirty-six of the 71 provided further feedback, many of whom repeated points they made in earlier comments. For example, 7 of 36 found the *system unnecessary*, 5 *doubted the students would use the system*, 3 *wanted better integration into university systems*, 3 *did not find it easy to use*. On the other hand, 5 liked to have all their *reading material in one place*, 3 *felt it benefited the students*, 3 *liked that it helped to adhere to copyright rules*, and 2 felt it was *easy to roll over existing RLs*.

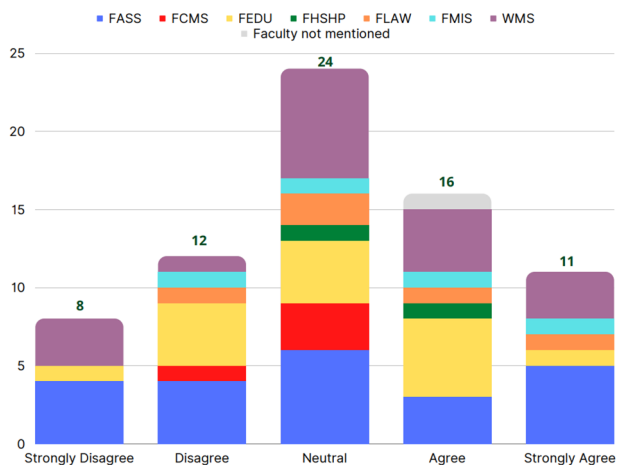


Fig. 15 WRL made my job of teaching easier—academics rating (n = 71)

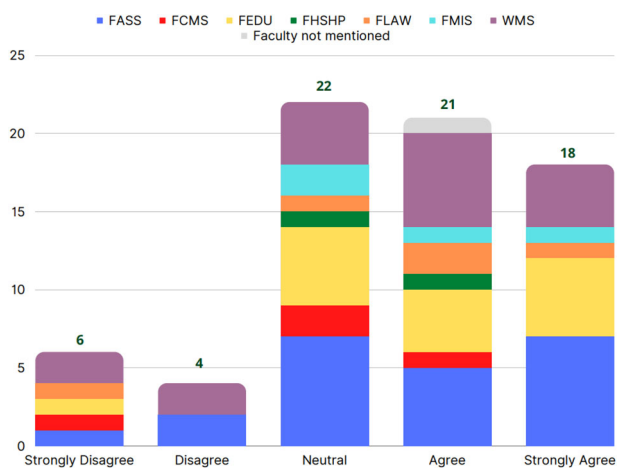


Fig. 16 Having the WRL is useful—academics' rating (n = 71)

When asked about the satisfaction with the existing integration with Moodle (Fig. 17), 24 of 68 academics were neutral, 32 were positive and only 12 expressed a negative opinion. In contrast to the academics' impressions, the academic liaison librarians' responses on the same question were more negative: 3 gave negative feedback, 1 was neutral, and 2 were positive. In their detailed feedback, 12 respondents (9 academics, 3 librarians) stressed that the *system needs better integration*, 5 asked for the RLs to be *more visible within Moodle* (to encourage students to use RLs), 4 suggested to *auto-populate RLs information*. They suggested that the streamlining of integration may include, for instance, the inclusion of the readings with the relevant week/module/an individual item or topic.

Finally, respondents volunteered some suggestions to improve the WRL, which we grouped as follows: *better integration of the RLs with other teaching systems* (11), *easy steps to complete the functions* (9), *help and user guidelines on how to use the RLs* (6), *better UX features and user-friendliness* (6), see Fig. 18. In addition, the librarians made the following suggestions on system functionality: *adding a*

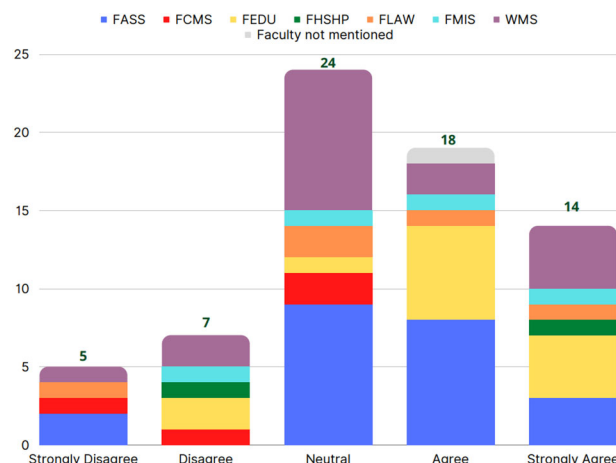


Fig. 17 Satisfaction of integration of WRL with Moodle—academics rating (n = 68)

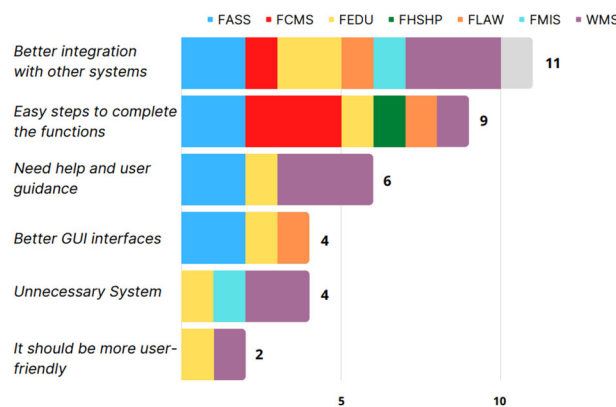


Fig. 18 Suggestion on how to improve the WRL (academics, n = 35)

dashboard that measures students' engagement (1), adding a function that facilitates hiding sections in the lists (1). Two further librarian comments suggested enforcing the use of RLs by academics (1) and abolish the system in exchange for a system that is based on Moodle (1).

In summary, respondents' overall feedback on the ongoing use of the WRL reveals that the majority acknowledged the usefulness of the WRL. However, their detailed responses strongly suggested that improvements are necessary, including a streamlined workflow for the WRL functionalities and better integration of the WRL with other university systems used in teaching.

When comparing the feedback from academics from different faculties, we do not find any discipline-specific feedback about the ease of use of the WRL.

## 6 Discussion

We discuss insights from our studies reported in this article, particularly in relation to related literature.

### 6.1 RL numbers over time

We observed that similar to other studies [9, 15, 16], the initial years of WRLs saw low numbers of RLs, with only a few academics being involved. In later years, the number of RLs grew at UOW, similar to other studies. In the engagement of academics with RLs creation, we identify two trends at UOW: RLs creation were at very high levels in four faculties (FEDU, FASS, FSEN, and WMS) and at low levels in the other four faculties (FMIS, FCMS, FHSHP and FLAW). While some of these differences may be explained by differing faculty size, there also seem to be disciplinary differences. Other studies confirm similar variations between faculties [16, 17], but the specific pattern observed in our study had not been observed.

Related work reported on a number of interventions that helped with increasing RLs numbers, e.g., library staff creating the lists, a dedicated team to create the lists, improving communication between library and academics, continuous training [9, 15]. At the UOW, the situation was found to be somewhat different: while more RLs were created over time, their overall increase was lower compared to that found in other studies. Even though similar interventions were in place at Waikato (e.g., a team of librarians creating RLs), the overall academic engagement remained low.

### 6.2 RL content types

From the questionnaire, we found that 85% of academics reported the inclusion of *journals/articles*, and 77% reported using *books/eBooks* in WRL. In addition, 38% of academics reported including *other materials*, such as *web pages* [12];

survey at the University of West London revealed *books/eBooks* being the most popular format for RLs inclusion (96%), with *chapters/articles* or *audio-visual material* being less often included (60%). We observe that overall, very little data are available and are difficult to compare due to conceptual differences.

From the log data, we found that 43% of all materials included in WRL in 2020 were *journals/articles*, 40% were *books/chapters*, and 17.5% were *other materials*. This seems to mirror the preferences stated by academics during the survey.

When analyzing the difference between faculties, we found that most linked *journals/articles* and *books/chapters* were included in the close-to-equal measure. The only exceptions were Science/Engineering with a clear preference for *books/chapters* (86%), and Computing with a preference for *other items* (55%). Even though the WRL content was driven by the need to acknowledge copyrighted material, these differences between faculties may highlight area-specific preferences. While Brewerton and Krol [1, 9] similarly commented on the differences between disciplines, their observations were merely anecdotal. Our study is the first to observe these differences in a log study.

### 6.3 Satisfaction with RL system

We found that at the UOW very few academics set up RLs independently, with 47% seeking help and 33% fully depending on someone else to set up the RLs (see Fig. 8). The main reasons given were the complexity in setting up RLs, and time constraints, which reflect the observations in other studies [9, 12, 14]. Many academics felt that the RL system was unnecessary, doubted the actual usage by the students, and disliked the lack of integration with other university systems. One of the challenges identified by the academics and librarians points to the inconsistencies between the online systems offered by publishers in terms of linking to eBooks, and to chapters/parts of eBooks. A standardization at the publisher or RL system level would greatly ease the burden to the creators of RLs.

Fourteen percentage of respondents did not find the WRL useful, and the feedback of the 31% of the respondents who remained neutral revealed that many were not satisfied with the RLs functionality. This is only a slightly better result than that reported by Zhu [14] where the majority of academics were dissatisfied with their RL system, as they did not find it stable and easy to use. Krol [9] similarly reported that only 50% of their respondents felt comfortable using the RL system, due to time pressure, lack of training, and lack of confidence. Our study results thus agree with earlier studies [9, 12] in observing that time constraints were a limiting factor in RL engagement by academics. We conclude that similar to many other RL systems, the WRL system did not

offer academics sufficient incentives (i.e., teaching-related benefits) to want to invest their already-limited time.

From these reasons, we hypothesize that a lack of relevance of the RL system to the academics' work as teachers may have been a barrier. It remains unclear from our study data if this lack of relevance was caused by an "asymmetrical disconnection" [23] between librarians (who set up and maintain the RL system) and academics (who use RLs in their courses). This may have led to a potential misalignment in the system purpose and academic needs.

Krol [9] found that 84% of their respondents agreed that RLs can be useful as a pedagogical tool. The original concept of academic RLs was to provide pedagogical 'scaffolding' by academics to students via signposting and annotations [3]. However, the WRL system does not currently offer comprehensive pedagogical support. We note that the opportunity of establishing a RL system as a pedagogical tool has so far been missed. We believe the reason is that the system was acquired predominantly to address the legal requirement of copyright reporting, and any potential pedagogical benefits to teachers or students were not considered.

## 6.4 Implication for digital libraries

Requirements of tracking the reading materials [5, 6, 24] and the integration of digital libraries in academic learning environments [7, 8, 23, 25] were highlighted in previous studies. From the results of our study, we conclude that for a digital library to provide reading list functionality, linkage to both internal documents and documents provided by external publishers is required. In addition, linking to external sources, such as webpages, needs to be supported. A seamless access to the different content types would be of importance. Features that could support pedagogical commentary would need to be provided by the digital library system to go beyond lists of content for each course.

## 7 Summary and conclusion

This article provides insights into the introduction of a RL system at the UOW over five years, and the experiences of academics and librarians with the University's RL system. From our log analysis and questionnaire responses, we draw the following five conclusions:

First, the faculties showed great variation in RLs uptake ranging from 3 to 63%, with a mean of 41, which we believe may be due to differing disciplinary requirements. In order to better support the various faculty teaching strategies, we recommend that the library takes a flexible approach and develops discipline-specific initiatives to increase the number of RLs.

Second, the results from our log analysis study confirmed the differences in RLs content across disciplines which was previously only reported through anecdotal evidence.

Third, we found the RLs setup process to be complex and time-consuming and only a few academics managed to set up the RLs independently. We recommend streamlining the RLs creation process.

Fourth, we observed that many academics struggle to link eBook and other teaching materials with the RLs and do not perceive the linking process to be user-friendly. We identified a need to improve the usability of the resource-linking process.

Finally, while acknowledging the University's requirement to implement RLs for recording copyrighted materials, we see a significant need for pedagogical support in WRL to better integrate into academic teaching. We believe that the uptake and perceived usefulness of WRL could be improved through enhancing the pedagogical benefits and integration of RLs into teaching activities and support systems.

This study focused on exploring the experiences of those academics who were involved with creating RLs. As an extension of our work, it may be interesting to explore the feedback from those academics that did not engage with RLs. We are currently carrying out a companion study that explores the students' perceptions and experience of RLs. Insights from this second study will help guide our future research into pedagogical features needed for RL systems.

**Funding** Not applicable.

**Data availability** University library, Waikato Reading Lists transactional log data (2016–2020).

**Code availability** Not applicable.

## Declarations

**Conflict of interest** Not applicable.

**Ethical approval** Ethical approval has been taken from the ethics committee in the Division of Health, Engineering, and Computing & Sciences of the University of Waikato.

**Consent for publication** Not applicable.

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## Appendix A: Particularities of the each of faculty

Faculty	Available support staff	Adopted teaching support systems
<p><b>Faculty of Art and Social Sciences (FASS):</b> Offers programmes in areas such as languages and linguistics, music, dance, theater, screen and media, anthropology, geography, environmental planning, history, philosophy, political science, social and public policy, sociology and social work</p> <p><b>Faculty of FCMS:</b> Offers a stimulating and leading-edge environment of quality relevant teaching programmes in design, computer science, software engineering, mathematics, and data analytics</p> <p><b>Faculty of Education (FEDU):</b> Offers programmes in areas such as teacher education, counseling, human development, education, educational leadership and education studies</p> <p><b>Faculty of Health, Sport and Human Performance (FHSHP):</b> Offers qualifications that offer students who are passionate about health, hauora and wellbeing the opportunity to develop knowledge and skills to enhance the lives of individuals and communities</p> <p><b>Faculty of Law (FLAW):</b> Offers an innovative, student-focused Bachelor of Laws (LLB) degree in a stimulating academic environment</p> <p><b>Faculty of Maori and Indigenous Studies (FMIS):</b> Offers programmes in Māori language and linguistics, culture, customs, creative and performing arts, media and communication, Treaty of Waitangi, and development studies</p> <p><b>Waikato Management School (WMS):</b> Offers a wide range of business education at all levels of study</p> <p><b>Faculty of Science and Engineering (FSEN):</b> Offers a range of innovative programmes for the undergraduate degrees of Bachelor of Science and Bachelor of Engineering</p>	<p>Each faculty is assigned with two academic liaison librarians</p> <p>Academic Liaison Librarians work with academic staff and postgraduate students to provide specialist tutorials and individual assistance for study and research</p> <p>Specialist staff also provide reference services, copyrights, tutorials and individual assistance to help staff and students to access and use Mātangireia and Map resources</p>	<p><b>Moodle</b> as the Learning Management System</p> <p>The <b>Paper Outlines</b> System is to provide a centralized repository where subject outlines can be created, maintained, reviewed, presented and stored</p> <p><b>Panopto</b> enables University staff and students to capture and deliver audio and video content</p> <p><b>Library's information systems and technology</b> includes Library Services Platform (Alma), Discovery Layer (Primo) and subscribed databases</p> <p><b>Waikato Reading Lists</b> for tracking copyrights and course reading management</p> <p><b>Research Commons</b>—institutional research repository</p> <p><b>O Neherā</b> includes Digital Collections such as photographs, postcards, maps and posters</p>

## Appendix B: Questionnaire for academics

No	Question	Type	Options
1	I am	Multiple choice	I. Academic Staff II. Academic Support Staff
2	I am a staff member of the faculty	Multiple choice	I. Waikato Management School (WMS) II. Faculty of Computing and Mathematical Sciences (FCMS) III. Faculty of Art and Social Sciences (FASS) IV. Faculty of Maori and Indigenous Studies (FMIS) V. Faculty of Science and Engineering (FSEN) VI. Faculty of Health, Sport and Human Performance (FHSHP) VII. Faculty of Education (FEDU) VIII. Faculty of Law (FLAW)
<i>The following questions are about your engagement with the Waikato Reading List</i>			
3	Which of the following statements explain your Waikato Reading List set-up?	Checkbox	I. I have set up Waikato Reading Lists by my-self II. Someone else set up Waikato Reading Lists for me III. With the help of others, I have set up Waikato Reading Lists IV. Other
	If you sought help from others to set up Waikato Reading Lists, please specify what kind of help you sought?	Open-ended	–
4	For how many papers have you created a Waikato Reading List?	Multiple choice	1 2 3 4 5 Other
5	For papers that you have taught multiple times, how many of those papers have had a Waikato Reading List more than once?	Multiple choice	1 2 3 4 5 Other
6	What materials have you included in Waikato Reading Lists?	Checkbox	I. Course materials (presentations, documents, audios, videos, images etc.) II. eBooks III. Scans from printed books IV. Web Page (blog, articles, but NOT academic journal/conference articles) V. Academic journals/conference articles

No	Question	Type	Options
			VI. Periodicals/magazines VII. Other
<i>The following Questions (7–8) are about your experience with setting up a Waikato Reading List</i>			
7	I found the setup of Waikato Reading List to be clear and easy to interact with	Likert scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
8	Any other feedback about the setup process?	Open-ended	–
<i>The following Questions (9–12) are about your experience with linking an eBook or other teaching materials in Waikato Reading Lists</i>			
9	I have successfully linked eBooks or other teaching materials with my Waikato Reading Lists?	Multiple choice	I. Yes II. No
10	If your answer is NO for the above, what are the reason/s?	Checkbox	I. I wasn't aware that I can link eBooks II. I was aware that I can link eBooks but I didn't know how to link eBooks via Waikato Reading List III. Linking eBooks via WRL is difficult IV. The process of linking eBooks via Waikato Reading List is confusing V. I choose other methods to make eBooks available to students VI. For my papers I recommend students to use print books VII. For my papers, the Library doesn't have the eBooks VIII. I'm not using eBooks in my papers or course readings IX. Other
11	I found linking an eBook to the Waikato Reading List to be simple and clear	Likert scale	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
12	Any other feedback about linking an eBook or other teaching materials with the Waikato Reading List?	Open-ended	–
<i>Questions 13–16 are about your experience of ongoing use of the Waikato Reading List</i>			
13	I used the Waikato Reading List to teach students in the following mode. You may select more than one	Checkbox	I. On-campus students (courses labeled HAM, TGA, or ZUC) II. Off-campus students (courses labeled NET)
14	The Waikato Reading List made my job of teaching easier	Likert Scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

No	Question	Type	Options
	Please provide more details about your rating on the above question	Open-ended	–
15	I found having the Waikato Reading List to be useful	Likert scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
16	Overall, I'm satisfied with how the Waikato Reading List is integrated with Moodle	Likert scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
17	Please provide your suggestions to improve the Waikato Reading List to make your teaching easier	Open-ended	–

## Appendix C: Questionnaire for academic liaison librarians

No	Question	Type	Options
<i>The following questions are about your engagement with Waikato Reading Lists</i>			
1	Which of the following statements explain your Waikato Reading List setup?	Checkbox	I. I have set up Waikato Reading Lists by myself II. I have sought the help of others to set up Waikato Reading Lists III. I have set up Waikato Reading Lists for someone else
2	If you have setup a Waikato Reading List for someone else, please explain the reason(s) for this	Open-ended	–
3	If you setup Waikato Reading Lists for someone else, please specify what kind of help that you provided?	Open-ended	–
4	How many Reading Lists have you created?	Multiple choice	0–5 6–25 26<
5	How many times have you been asked to edit a rolled over list?	Multiple choice	0–5 6–25 26<
6	What materials have you included in Waikato Reading Lists?	Checkbox	I. Course materials (presentations, documents, audios, videos, images etc.) II. eBooks III. Scans from printed books

No	Question	Type	Options
			IV. Web Page (blog, articles, but NOT academic journal/conference articles) V. Academic journals/conference articles VI. Periodicals/magazines VII. Other
<i>The following Questions (7–8) are about your experience with setting up a Waikato Reading List</i>			
7	I found the setup of Waikato Reading List to be clear and easy to interact with	Likert scale	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree
	Please provide more details about your rating on the above question	Open-ended	–
8	Any other feedback about the setup process?	Open-ended	–
<i>The following Questions (9–11) are about your experience with linking an eBook or other materials in Waikato Reading Lists</i>			
9	I have successfully linked eBooks or other materials with the Waikato Reading Lists	Multiple choice	I. YES II. NO
10	Any other feedback about the setup process?	Open-ended	–
<i>The following Questions (9–12) are about your experience with linking an eBook or other teaching materials in Waikato Reading Lists</i>			
9	I have successfully linked eBooks or other teaching materials with my Waikato Reading Lists?	Multiple choice	I. YES II. NO
10	If your answer is NO for the above, what are the reason/s?	Checkbox	I. I wasn't aware that I can link eBooks II. I was aware that I can link eBooks but I didn't know how to link eBooks via Waikato Reading List III. Linking eBooks via WRL is difficult IV. The process of linking eBooks via Waikato Reading List is confusing V. Other
11	I found linking an eBook to the Waikato Reading List to be simple and clear	Likert scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
12	Any other feedback about linking an eBook or other teaching materials with the Waikato Reading List?	Open-ended	–
<i>Questions 13–15 are about your experience of ongoing use of the Waikato Reading List</i>			
13	I have set up the Waikato Reading List for students who study in the following mode. You may select more than one	Checkbox	I. On-campus students (courses labeled HAM, TGA, or ZUC) II. Off-campus students (courses labeled NET)
14	Overall, I'm satisfied with how the Waikato Reading List is integrated with Moodle	Likert scale	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
	Please provide more details about your rating on the above question	Open-ended	–
15	Please provide your suggestions to improve the Waikato Reading List to support teaching better	Open-ended	–

## References

- Brewerton, G.: Implications of student and lecturer qualitative views on reading lists: a case study at Loughborough University, UK. *New Rev. Acad. Librariansh.* **20**(1), 78–90 (2014). <https://doi.org/10.1080/13614533.2013.864688>
- Stokes, P., Martin, L.: Reading lists: a study of tutor and student perceptions, expectations and realities. *Stud. High. Educ.* **33**(2), 113–125 (2008). <https://doi.org/10.1080/03075070801915874>
- Van Der Stuyf R (2002) Scaffolding as a teaching strategy. In: *Adolescent Learning and Development*, pp. 2–13. Fall. <https://pileidou.files.wordpress.com/2013/11/scaffolding-as-a-teaching-strategy.pdf>
- Rowley, M., Hartley, J., Larkin, D.: Learning from experience: the expectations and experiences of first-year undergraduate psychology students. *J. Furth. High. Educ.* **32**(4), 399–413 (2008). <https://doi.org/10.1080/108003098770802538129>
- Al-Anazi, M., Hinze, A., Vanderschantz, N., Timpany, C., Cunningham, S.J.: Personal digital libraries: keeping track of academic reading material. In: Tuamsuk, K., Jatowt, A., Rasmussen, E. (eds.) *The Emergence of Digital Libraries—Research and Practices*. ICADL 2014. *Lecture Notes in Computer Science*, vol. 8839. Springer, Cham (2014). [https://doi.org/10.1007/978-3-319-12823-8\\_5](https://doi.org/10.1007/978-3-319-12823-8_5)
- Akbar, M., et al.: Digital library 2.0 for educational resources. In: Gradmann, S., Borri, F., Meghini, C., Schuldt, H. (eds.) *Research and Advanced Technology for Digital Libraries*. TPDFL 2011. *Lecture Notes in Computer Science*, vol. 6966. Springer, Berlin (2011)
- Margaret, M.: Technology and people: some challenges when integrating digital library systems into online learning environments. *New Rev. Inf. Libr. Res.* **9**(1), 85–96 (2003). <https://doi.org/10.1080/13614550410001687936>
- Virkus, S., Agegn, A.G., Asfaw, D.T., Jakup, K.B., Melgar, E.L.M., Yadav, D.: Integration of digital libraries and virtual learning environments: a literature review. *New Libr. World* **110**(3/4), 136–150 (2009). <https://doi.org/10.1108/03074800910941338>
- Krol, E.: Can online reading lists achieve meaningful engagement with the academics and students within a digital landscape? A case study from the University of West London, 5th International Scientific Conference, Warsaw, Poland. <http://repository.uwl.ac.uk/id/eprint/6091> (2019)
- Chad, K.: The rise of library centric reading list systems. *HELibTech Brief*. Article No **5**, 1–13 (2018). <https://doi.org/10.13140/RG.2.2.12337.89445>
- Copyright Licensing New Zealand: University pilot license agreement 2015–2016. University of Waikato Data Archives. [www.waikato.ac.nz/\\_data/assets/pdf\\_file/0005/262904/CLL-University-Licence-2015-2016-Waikato-University-Licence.pdf](http://www.waikato.ac.nz/_data/assets/pdf_file/0005/262904/CLL-University-Licence-2015-2016-Waikato-University-Licence.pdf) (2014)
- Cameron, C., Siddall, G.: Opening lines of communication: book ordering and reading lists, the academics view. *New Rev. Acad. Libr.* **23**(1), 42–59 (2017). <https://doi.org/10.1080/13614533.2016.1224769>
- Cross, R.: Implementing a resource list management system in an academic library. *Electron. Libr.* **33**(2), 210–223 (2015). <https://doi.org/10.1108/EL-05-2013-0088>
- Zhu, Y.: Factors influencing lecturers' intention to use Talis Reading List Management System at Auckland University of Technology [Master's thesis, Auckland University of Technology], Auckland University of Technology Research Archives. <http://hdl.handle.net/10063/8019> (2018)
- Walsby, O.: Implementing a reading list strategy at The University of Manchester—determination, collaboration and innovation. *Insights* **33**(3), 1–9 (2020). <https://doi.org/10.1629/uksg.494>
- Beasley, R.: An exploration of disciplinary differences in the use of Talis at the University of Auckland [Master's thesis, Victoria University of Wellington] Victoria University of Wellington Research Archives. <http://hdl.handle.net/10063/5629> (2016)
- Neill, M.O., Musto, L.: Faculty perceptions of Loughborough's online reading list system (LORLS) at Dublin Business School (DBS). *New Rev. Acad. Libr.* **23**(4), 353–376 (2017). <https://doi.org/10.1080/13614533.2016.1272473>
- Taylor, A.: Engaging academic staff with reading lists: the Worcester story. *J. Inf. Lit.* **13**(2), 222–234 (2019). <https://doi.org/10.11645/13.2.2660>
- Devine, L.: Reading lists: Justifying the benefits for both students and lecturers. Talis Supports Webinar Archives. <https://support.talis.com/hc/enus/articles/115004062029-Reading-lists-justifying-the-benefits-for-both-students-and-lecturers-webinar-2017> (2017)
- Venkatesh, V., Brown, S.A., Bala, H.: Bridging the qualitative-quantitative divide: guidelines for conducting mixed methods research in information systems. *MIS Q* **37**, 21–54 (2013)
- The University of Waikato: Annual report 2020. [https://www.waikato.ac.nz/\\_data/assets/pdf\\_file/0003/707205/University-of-Waikato-Annual-Report-2020.pdf](https://www.waikato.ac.nz/_data/assets/pdf_file/0003/707205/University-of-Waikato-Annual-Report-2020.pdf) (2020)
- Jansen, B.J., Taksa, I., Spink, A.: Research and methodological foundations of transaction log analysis. In: *Handbook of Research on Web Log Analysis*, pp. 1–16. IGI Global, <https://doi.org/10.4018/978-1-59904-974-8.ch001> (2008)
- Rezaei, S.: How digital libraries can support e-learning. *Electron. Libr.* **24**(3), 389–401 (2006). <https://doi.org/10.1108/02640470610671231>
- Agosti, M., Crivellari, F., Nunzio, G.M., Gabrielli, S.: Understanding user requirements and preferences for a digital library Web portal. *Int. J. Digit. Libr.* **2008**(11), 225–238 (2010)
- McMartin, F., Iverson, E., Wolf, A., Morrill, J., Morgan, G., Manduca, C.: The use of online digital resources and educational digital libraries in higher education. *Int. J. Digit. Libr.* **2008**(9), 65–79 (2008)

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