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Collaborating to support the use and development of open educational resources: a White Rose Libraries research project

Interest in open educational resources (OER) has grown recently due to many external factors, including the restrictive, unsustainable and expensive business models for teaching materials that are being used by some publishers. In February 2021, the libraries of the UK White Rose University Consortium (White Rose Libraries) initiated a research project to explore the potential of OER and to create guidance in the form of an OER toolkit that could be used across all three institutions, and more widely. The project also aimed to seek improvements in the discovery of OER in the Ex Libris Primo discovery service which is used by all three libraries. This article outlines the methodology used to ascertain the needs of the libraries' user groups to inform the development of the toolkit. A survey of academic staff across all three institutions was conducted, followed by user experience interviews. The survey findings established that more than half of respondents knew little or nothing about OER, and over half also said that they would be likely or extremely likely to consider using or adapting OER, clearly demonstrating the need for more awareness raising and guidance. The survey interview findings were then used to develop and refine the toolkit.

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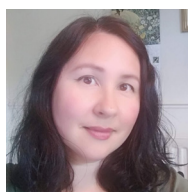
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Introduction

White Rose Libraries is a collaboration between the library services of the three partner institutions of the White Rose University Consortium, these being the Universities of Leeds, Sheffield and York. Taking advantage of the geographic proximity of the Universities, their similar strategic and operational focus as large research libraries and the existing links between their researchers, students and staff, the White Rose Libraries have worked together since 2004 on a number of initiatives that have allowed them to pool resources and expertise.

The White Rose Libraries open educational resources (OER) project was initiated in 2021, and drivers for the project included restrictions on access to physical library stock during the Covid-19 pandemic lockdowns, unsustainable and expensive business models for the provision of many e-books, as well as a growing interest in open and sustainable education.

The universities represented in the project are partners in other open endeavours, including White Rose Research Online, White Rose eTheses Online and White Rose University Press. They all use Ex Libris discovery services. Developing support for a new service is resource intensive and it made sense to share the work and draw on the experience of each institution. This long history of collaboration at all levels within our organizations provided a solid start for the project.

OER are defined in the UNESCO Recommendation on OER[1] as 'learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open licence, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others'. Within each of the three White Rose institutions, pockets of work were already taking place around OER (for example Leeds already had an OER policy in place and Sheffield was piloting the use of Pressbooks), or there was an active interest in exploring the potential of OER.

The project's aims were:

- academic engagement to establish awareness and support needs around the use of OER in teaching

- the creation of an advocacy toolkit for use by all three institutions that supports academic staff who want to use or create OER, as well as supporting library staff to assist academics

- the development of one or more case studies that help both library colleagues and academic staff to see what is possible and how it may be achieved

- upskilling, improved knowledge and confidence of library staff to enable effective support for academics in sourcing, adopting, adapting and creating OER

- the identification of areas of good practice in other UK higher education institutions

- seeking improvements from Ex Libris in OER discovery and exploring ways in which existing collections of OER can be reviewed and activated in Primo.

Literature review

To inform the development of the project, and the choice of methodologies, the team conducted a literature review using the question 'How do university libraries support the use and creation of open educational resources?'. Literature was identified from Scopus, ProQuest Education, LISA and Library Literature via EBSCO, focussing primarily on articles published in the years 2018–2021. The review also included material identified by the project team in the early stages of the project. Most of the literature identified emanated from the USA, where a key driver for OER programmes is to reduce textbook costs for students. There were fewer examples from the UK and other geographies.

Reed and Jahre[2] reviewed the state of library support for OER in the USA, finding that many libraries administer grant programmes to incentivize and compensate faculty for their time and effort in implementing OER into their programmes. The article also discussed the challenge of ensuring the ongoing sustainability of supporting OER and other challenges posed by publishers, such as 'inclusive access' models where textbook costs are built into student fees, or campus-wide e-textbook subscriptions that are likely to increase costs for libraries.

'drivers for the project included … unsustainable and expensive business models for the provision of many e-books'

'the team conducted a literature review using the question "How do university libraries support the use and creation of open educational resources?"'

McGowan[3] used content analysis methodology on a sample of 37 US regionally based higher education institutional websites to determine the current state of institutional support mechanisms relating to OER. The research identified a focus on grant-funded initiatives and found that 48% of the sample initiatives were sponsored by university libraries. The study concluded that although the availability of grants was becoming more widespread, there were questions about sustainability and permanency. Future growth would be likely to depend on robust evidence of reduced student costs and other positive impacts.

Articles by Crozier[4], Katz[5] and Santos[6] discussed institutional OER initiatives, including advocacy, awareness and the development of library administered grant programmes to encourage the adoption of OER in place of traditional textbooks. Davis[7] and Pate[8] both refer to the use of library resources alongside OER initiatives to help reduce student costs.

Advocacy and support for the adoption of existing OER are more widespread than initiatives supporting the creation of OER, according to Santiago and Ray[9] in an article discussing the use of Pressbooks at the Universities of Houston and Washington. At Emporia State University, Sarah Sutton[10] received a grant to help her replace a traditional textbook with a series of OER video interviews, subsequently joining an OER task force at Emporia. Her article outlines the planned work of the task force and the challenges faced, including faculty time and incentives, intellectual property rights, student preference for print texts over digital, visibility and the quality of OER.

In some studies, surveys of faculty were undertaken to inform the development of OER programmes. Walton[11] discusses the importance of collaborative working between relevant services and the establishment of a community of practice (CoP) to support OER in their institution. As a first step to improving awareness of OER, it was clear that an environmental scan was needed, and with this in mind the library ran a survey that was distributed by e-mail to all faculty members. This was completed by 17% of faculty and was important as a means of establishing a baseline and in developing the work of the CoP. The survey identified that finding suitable OER was a barrier, and, like many other institutions, the library has developed a one-stop-shop library guide[12] to help address this.

Todorinova and Wilkinson[13] reported on a survey undertaken at Rutgers University to assess the impact of an OER adoption incentivization programme. The survey results indicated some confusion about the difference between OER and other free internet resources and, had this information been available sooner, the programme may have been designed differently to incorporate more awareness raising or training:

> 'While the OAT project team designed this study primarily as assessment of the OAT program, this kind of survey might have been particularly useful if administered to a larger, more representative sample of faculty prior to the creation of the program.'[14]

The searches retrieved a small number of studies from areas beyond the USA. A survey undertaken by Zaid and Alabi[15] sought to identify levels of awareness, use and sustainability mechanisms for OER initiatives in Nigerian universities, finding that many participants were not aware of the OER initiatives adopted by their universities. Ponte, Lennox and Hurley[16] discussed using the experience gained by RMIT University Library staff on a visit to British Columbia to further the development of OER in Australia with the Open Textbook Initiative as a focal point. A survey by Mwinyimbegu[17] employed a questionnaire circulated to university librarians and documentary review to find out about levels of awareness and support for discovery and use of OER in Tanzanian university libraries.

The searches retrieved a very limited number of results relating to the UK, even when the parameters were widened to include results from earlier years. A case study based on a survey of teaching staff at Edge Hill University[18] aimed to investigate awareness of and participation in the open content movement. Although respondents were receptive to the idea of sharing their own content, there was little formal, large-scale sharing using suitable licences. More recent literature suggests that little progress has been made since that study was conducted. The UK Open Textbook Report[19] concluded that although awareness and knowledge of OER and open textbooks is typically very low in the UK higher education

sector, once educators were made aware of them, they expressed significant interest in their adoption. Pool[20] provides a short overview of OER in the UK and refers to the gap in OER development between the USA and the UK, acknowledging that the drivers are very different. In the USA, textbook affordability for students is key, whereas in the UK, expensive and unsustainable e-textbook publisher models for libraries make it challenging to provide access for students. The article also discusses plans for an e-textbook platform at University College London (UCL) and mentions that one of the top ten downloaded books from the UCL Press is an open access textbook.

A case study of two Scottish academic libraries providing OER services[21] aimed to investigate why and how Scottish university libraries support open educational resources, and to assess their ability to provide support services for their development and use within higher education institutions. Motivating factors were to support teaching and learning and to develop educator digital skills and copyright knowledge. The study found low levels of awareness, use and creation of OER and while acknowledging that library staff have the commitment and skills to support OER, it also highlighted the importance of institutional commitment, incentives for educator engagement and an understanding of copyright and licensing issues by educators and library staff.

> 'one of the top ten downloaded books from the UCL Press is an open access textbook'

A survey of open education in European libraries of higher education prepared by SPARC[22] surveyed 146 libraries from 28 European countries, 16 of which were from the UK, including the Universities of Leeds and Sheffield. The survey report found that, 'libraries provide a supportive role much more consistently than they do a leading role in areas addressed by this survey.'[23] Respondents were asked to identify challenges and opportunities relating to OER, and policy, culture and environment, people, resources, quality and access were all mentioned as both challenges and opportunities. However, more respondents identified the challenges rather than the opportunities presented by most of these areas, the only exception being the area of quality and access. The report concluded with a number of recommendations for libraries to act on, including stepping up advocacy, identifying and developing the necessary staff skills, devoting some library budget to OER, consideration of funding incentivization grants and taking leadership.

Given the limited amount of literature relating to research conducted by UK higher education libraries, we concluded that the White Rose Libraries OER project would fill a gap. The studies covered by the review employed a range of research methodologies, including surveys and questionnaires, focus groups, case studies and content analysis, but none referred to user experience (UX) methodologies. We therefore decided to employ UX methodology alongside a survey of academic staff, concluding that this would make the project particularly innovative.

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Methodology

The project team was keen to ensure from the outset that the project received ethics approval so that the terms for future use of the data collected were agreed and understood. This was obtained before we started any data collection, and a data sharing agreement and data management plan were put in place between the three institutions. Despite this part of the process being quite cumbersome and time-consuming, particularly because it involved three universities, it was well worth the effort and provided peace of mind. It encouraged us to consider data storage, access, security, integrity and confidentiality as well as potential future uses of the data. Two shared primary folders were set up, each with different access arrangements, one for project documentation and the other for data.

Another of the challenges of working across institutions was identifying the aims and scope of the work and articulating early on what each one wanted from the project. Each institution put forward project sponsors, drawn from library leadership teams, who met regularly as a group. Initial documentation was signed off by the sponsors and the project team sent monthly reports to this group. The project's success relied on sponsors who were committed and engaged throughout.

Having project team members from different universities meant we were able to draw on a much wider pool of knowledge and expertise beyond the small project team. The project team of five people comprised teaching librarians, teaching and research librarians, and a metadata specialist. This composition reflected where the main drivers for OER were coming from (academics who teach) and the metadata skills we anticipated would be needed to aid the discovery of OER.

> 'The project's success relied on sponsors who were committed and engaged throughout'

Following the decision by the group to undertake a search of the available literature, which highlighted a need for a new understanding of academics' awareness of and attitudes to open educational resources, the project team opted to assess these in two ways. Firstly, a survey was conducted with academic staff in all three institutions, which resulted in 70 responses. Secondly, the project team ran a series of UX interviews involving 13 volunteers. The literature search had suggested that this would be an innovative approach. The methodology and results are discussed in more detail in the following sections.

Although the survey and UX work provided meaningful insights into peoples' perceptions of OER, highlighting work streams to take forward, the broader project group also wanted a tangible outcome in the form of a 'toolkit' which could be used to upskill both teaching colleagues and library colleagues. The survey and the UX interviews were conducted with this in mind, seeking to identify appropriate material to include in the toolkit and ensuring that it met user requirements.

Survey and findings

One of the aims of the OER project was engagement with the academic community to establish academic awareness and to inform the development of library support services for OER. SPARC Europe conducts an annual survey of open education in European libraries of higher education, but this is directed at libraries, not individual academic staff. The literature review undertaken for the project found several articles about projects in higher education libraries in the US and elsewhere that included surveys of academic staff, but nothing similar by UK higher education libraries in recent years.

> 'the broader project group … wanted a tangible outcome in the form of a "toolkit" which could be used to upskill both teaching colleagues and library colleagues'

The development of the survey was informed by examples from other institutions, including the University of Hawaii[24] and the Faculty of Health and Life Sciences at De Montfort University.[25] The survey was designed in Google Forms and started with some background information about the project (see Supplemental files). To comply with good research practice and ethics, the survey was anonymous and did not automatically collect names or e-mail addresses, and the introductory section of the survey explained this. Survey participants who were interested in being more involved in the research, such as taking part in interviews, were invited to provide contact details so that they could be contacted at a later date.

Before the survey was launched, an academic colleague from the University of Sheffield, who had previously indicated an interest in the project and was willing to be a critical friend, was approached for feedback about it. Their feedback was used to make minor amendments to the survey, and it was then circulated to teaching staff in all institutions using appropriate local channels during December 2021 and January 2022.

About the participants

There were 70 responses, 15.7% from Leeds, 60% from Sheffield, 24.3% from York. Twenty participants across all three universities provided their names and e-mail addresses to indicate that they would be interested in further participation.

Participants were asked to say what discipline they taught using the categories provided by the HESA (UK Higher Education Statistics Agency). Nineteen different categories were selected, the most common being social science (27%), language and area studies (13%), education and teaching (10%), nursing, midwifery and health (8.6%), engineering and technology (8.6%), geographical and environmental studies (8.6%).

Participants were asked to say how long they had been teaching in higher education (Figure 1). Two thirds had more than ten years' experience, so a clear majority were experienced practitioners.
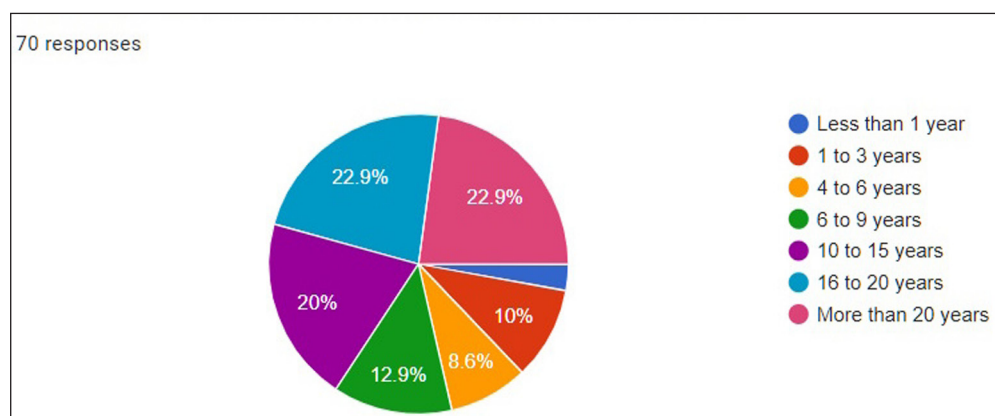

Figure 1. How long have you been teaching at higher education level?

Participants were also asked to say at which levels they taught: 88.6% taught undergraduates, 77.1% postgraduate taught students and 65.7% postgraduate research students. This suggested that a significant number taught across all those levels. The numbers teaching at other levels were much smaller (5.7% foundation, 1.4% professional development, 1.4% researchers).

Selecting material for teaching

Participants were asked to indicate who was responsible for selecting the materials used for teaching on their courses. There were 64.3% who selected their own material, with 30% indicating a more combined approach involving current and previous module leaders and teaching committees. This suggested that most participants had significant autonomy in this area.

Participants were also asked to rate which considerations they applied when choosing material. Appropriateness of content and availability through the library were the two most important considerations, with price, simultaneous access and ease of access for students showing as lower considerations.

Participants were asked to say how familiar they were with OER (Figure 2). Although 45% considered themselves very or somewhat familiar, 28% knew very little and 25% had never heard of them, indicating that there was a need for more awareness raising and advocacy.

Participants were asked to indicate from a range of options how they would find OER for their teaching. The top three tools selected were Google (55.7%), library catalogue (48.6%) and the Open Textbook Library (11.4%). There were 24.3% who said they would ask teaching colleagues and 22.9% who said they would ask colleagues in the library. A further 20% said they had never looked for OER and 17.1% said they had never heard of OER. One person said they use their own OER.
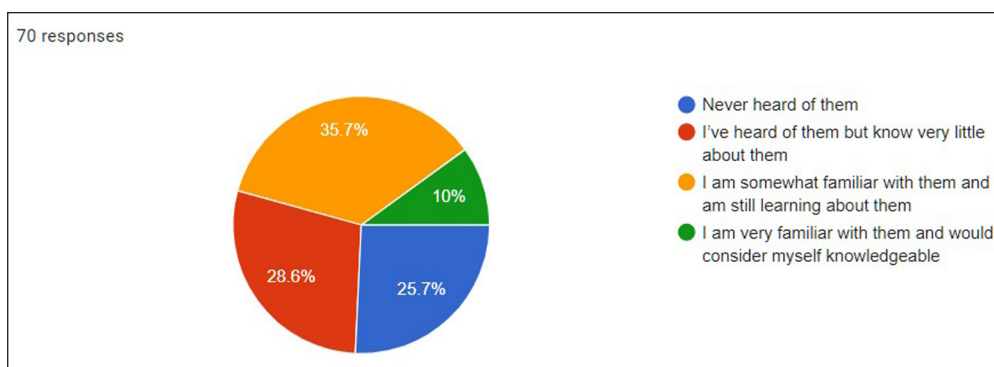
Figure 2. How familiar are you with open educational resources?

This section of the survey also asked about awareness of Creative Commons licensing. A clear majority considered themselves somewhat (62.9%) or very (15.7%) familiar with them, but 12.9% said they did not know how to use or interpret them, and 8.6% had never heard of them, indicating a need for more information and guidance.

Use, adaptation and creation of OER

Participants were asked how likely they were to consider using or adapting existing OER in their teaching (Figure 3). More than half (59.4%) were likely or very likely to do so, with 34.8% undecided. When asked what factors would influence them to use OER, the most highly ranked answers were better awareness of OER (74.3%), certainty about the quality (72.9%), time to find them (60%), ability to tailor them appropriately (54.3%) and belief in open education (40%). This indicated that in addition to awareness raising, guidance relating to the assessment and evaluation of material would be beneficial, which could also include reviews of OER.
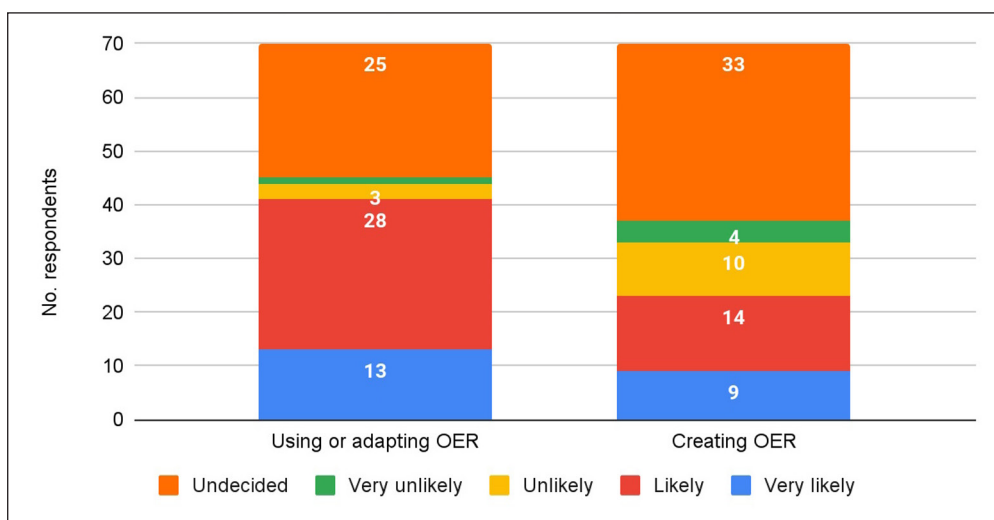

Figure 3. Thinking about your own teaching, how likely are you to consider using, adapting existing OER, or creating your own OER?

When asked how likely they were to create their own OER, 32.9% said they were likely or very likely to do so, with 47.1% undecided. When asked what factors would influence the creation of OER, the most highly ranked answers were having dedicated time (64.6%), having administrative and technical support and infrastructure (50.8%), the ability to create material specifically for their curriculum (50.8%), better awareness (44.6%) and incentives or recognition (43.1%). Other significant factors were better understanding of Creative Commons licences (38.5%), a belief in open education (40%) and a belief that creating OER would enhance the university's reputation (30.8%).

Participants were asked if they had created any OER themselves and, if so, what types of material. There were 70.3% who said they had not created any OER. The top three types of

material that respondents said they had created were videos (18.8%), lesson plans (12.5%) and software programs (9.4%), with smaller numbers creating textbooks, games, quizzes, audio material, case studies and images.

Reasons for not being interested in OER were not having time to create them (53%), not having time to find them (37.9%), no time to learn how to use them (31.8%) and uncertainty about quality (30.3%). Some participants (24.2%) were unsure about how their university or department viewed OER, suggesting that clearer policies and guidance could make some difference.

Participants were asked to rank the areas of support that they would like to help them learn more about using, adapting and creating OER. The top ranked areas were guidance on finding and using them (70.3%), availability of an institutional policy (51.6%), sources of funding or other incentives (40.6%), guidance on authoring open textbooks (34.4%), copyright and IP guidance (32.8%) and how to licence OER (29.7%).

Additional comments

At the end of the survey, participants were invited to leave further comments, and seven participants did so. One related to challenges surrounding the use of third-party images in OER. Another commented that they taught in a niche area and OER did not seem particularly relevant to them. One individual said they had had considerable experience of creating OER for different audiences. Another said they used resources that were openly available, including open software, but they were unsure if these could be defined as OER.

There was a comment from someone who had recently published a textbook with Oxford University Press, and who had negotiated terms that allowed a preprint version to be posted on the shared White Rose repository. The individual was willing to share the contract clause with others. Another participant commented that:

> 'The main issue for me is a lack of institutional policy … I would also like to see the narrative balanced, to encourage sourcing and using material from elsewhere to encourage diversity, rather than just using it for marketing/recruitment means.'

The final comment was from somebody who wanted to make course materials openly available:

> 'We are currently forming a position and a strategy on this work but would love central guidance and support. It seems that open sourcing as part of research is strongly encouraged, but teaching is bizarrely frowned upon.'

This participant went on to comment that the use of OER could potentially be seen as reducing the value of the institution's degrees.

Key findings

- the general levels of awareness of OER indicated in the survey demonstrated the need for more information, guidance and advocacy

- concerns about the quality of OER suggested that further information and guidance in this area would be beneficial

- better awareness and understanding of licensing and copyright issues is needed, including Creative Commons licences.

Several areas that would benefit from wider investigation in each institution were identified:

- having enough time to find and evaluate or create OER was a key consideration and, although in some circumstances resources could be made available for library staff to support these activities, it is more likely that teaching staff would prefer an adjustment to their workload allocation to enable this

- other enabling factors such as having administrative and technical support and infra-structure, and sources of funding or other incentives, including recognition for OER use and creation

- a significant number of participants (24.2%) said they were unsure about how their university or department viewed OER, and 51.6% said that an institutional policy would be useful in supporting them to engage more with OER. The University of Leeds already had an OER policy in place, and this was raised in interviews with academic colleagues from there.

Academic engagement and user experience

As part of the survey, respondents were invited to put themselves forward for semi-structured interviews. The interviewees had provided their contact details in their response to the survey, indicating that they were interested in further participation. The interviews enabled us to gather more detailed data and to follow up further on some of the issues raised in the survey. Three rounds of interviews took place. These were conducted online. Two members of the project team took part – one to lead the discussion and one to take notes. The interviews were recorded, with the permission of the interviewees, to supplement the notes and the recordings were subsequently deleted once the notes had been written up.

The first round of interviews took place in January 2022 with four academics from different departments at the University of York. The purpose was to gain insight into how they created their reading lists and found materials to include, specifically exploring the availability of OER and their inclusion on those lists. A thematic analysis was conducted and a copy of the report can be found in the Supplemental files. Suggestions from the first round about what should be included in the toolkit included:

- a section that specifically focuses on the accessibility checking of materials for people with physical or learning disabilities

- highlight the availability of OER after leaving higher education

- a one-stop area for access so there isn't a need for students to navigate multiple access points

- a section on diversity and inclusivity

- case studies giving examples of good practice.

There were also questions raised about the likelihood of the White Rose University Press publishing OER and the options for the storage of OER provided by our institutions.

The second round of interviews took place in April 2022 with four academics from different departments at the Universities of Sheffield and Leeds. The themes for discussion were the discovery, use and creation of OER, evaluation of OER, licensing and institutional OER policies. A thematic analysis report can be found in the Supplemental files, and the data collected informed the development of the toolkit. There was a broader range of comments from this round but the main points that came across were around how we share, distribute and store OER materials, and that all three institutions should have an OER policy. Some basic cosmetic changes were highlighted, with one being a quick guide on the front page of the toolkit highlighting some key principles.

'the main points … were around how we share, distribute and store OER materials, and that all three institutions should have an OER policy'

The third round of interviews was conducted in July and August 2022, and coincided with the soft launch of the beta version of the toolkit. The purpose was to gather feedback to help us refine and finalize the toolkit in preparation for a full launch in the autumn. Five interviews were conducted with participants from all three institutions. This round proved to be very valuable with regard to the functionality of the website and what content we should include or exclude. We asked our participants to talk us through the website, telling us what

they liked, disliked or did not understand. A report was written for this set of interviews (see the Supplemental files) and the findings were split into short- and long-term goals. The main suggestions received were:

- highlight the key differences between standard commercial textbooks, open access books and open textbooks

- ensure the OER collections on the 'finding' page reflect diversity

- emphasize the availability of OER to students after graduation

- improve the site navigation in response to user feedback

- develop case studies around existing OER within White Rose Libraries to illustrate the breadth of examples

- create our own introductory video featuring local academic staff

- explore ways of including student views on OER.

Developing the toolkit

Five months into the project, once we had designed the survey, the project group had preliminary discussions about what format a toolkit might take. We considered both LibGuides and Google Sites as possible platforms, opting for the latter because it provided more options for layout and it made collaboration across institutions easier. In advance of the survey results we created a skeleton structure, suggesting sections on: introducing, finding, evaluating, creating, adapting and licensing.

Once the survey had closed and the results analysed, we created a spreadsheet containing possible topics and links for inclusion under each of the toolkit sections, based on feedback from the survey and the first round of interviews. Project members each took responsibility for one or more sections. Simultaneously, we explored best practice in terms of site accessibility. We had a first draft of the toolkit content ten months after the start of the project. Adding an 'about' section was a decision we took a little later, and it provided space where we could explain about the White Rose Libraries collaboration and share data from the project. We also had a very brief discussion to confirm that we wanted to licence the toolkit under a CC BY licence.

The project group identified several individuals from other higher education institutions in the UK and Europe who could act as critical friends and provide constructive feedback. We also chose to share the draft toolkit with survey respondents and interviewees who had indicated a willingness to stay involved with the project. For several months we kept a link to a feedback form on the site and at our regular project meetings we went through the latest feedback and considered each suggestion. This feedback was a valuable addition to the comments we had received from those who participated in the third round of interviews.

At this point, the project group arranged to embed links to the toolkit in each institution's web pages and to actively promote the resource at every available opportunity. The toolkit had a 'soft' launch in September 2022 at an OpenFest event run by Sheffield, before being formally launched during Open Access Week in October 2022 at an event led by the University of Leeds.

Discovery of OER

The aims of this element of the project were to:

- compare current practice in OER discovery in Primo across the White Rose Libraries

- identify best practice in OER discovery in other higher education institutions

- investigate the viability of joint action across the sector to lobby Ex Libris on issues such as improved functionality for displaying OER licence information and the visibility and filtering of OER in Primo.

Work was taken forward by a project sub-group of discovery and metadata specialists from each institution, co-ordinated by one of the project managers from the University of Leeds. The group established that the White Rose Libraries generally have the same open access e-book collections represented in Alma and Primo. These were a mixture of Community Zone (CZ) and local records. The Community Zone is the shared Alma knowledge base and discovery catalogue. There was duplication between the collections, but the project team agreed that there was no requirement to hold exactly the same collections. The larger collections were not necessarily the most used. Work at the University of York established that smaller collections were often more widely used than a large collection. The group has discussed the pros and cons of having local records rather than Alma's CZ records. The metadata in CZ records was often poor compared to local records, and local records were therefore often more discoverable in Primo. The group is working towards ensuring that all local open access records are tagged and clearly display the open access icon in Primo.

The group also looked at the availability of licence information relating to OER. Licence information is not recorded consistently in MARC bibliographic data fields, and sometimes not at all. This is being raised through the Alma Ideas Exchange. The University of Leeds is planning a small-scale scoping project looking at how different licence options can be displayed and selected with facets in Primo.

The project group used the Ex Libris Alma and Primo mailing lists to ask how other institutions were making their OER collections discoverable. Only three responses were received, which were from universities in the USA and Australia, suggesting that this may not be a priority for the UK sector at the moment.

As the White Rose OER Toolkit has developed, the University of Leeds has been working on a Resource Recommender which directs the user to the toolkit from a Primo search for OER. This has been implemented in all three institutions.

'any continued development would require significant time from metadata teams, and this needs to be considered further by each institution'

There is a need for further work in the future, including developing criteria for evaluating OER records and collections, improving the availability of licence information, and continuing the work started by Leeds to increase the visibility of the toolkit. However, it has been recognized that any continued development would require significant time from metadata teams, and this needs to be considered further by each institution.

Concluding remarks

The research project concluded in late 2022, with the launch of the toolkit and the submission of a final project report and recommendations for consideration by the White Rose Libraries Innovation Board. The recommendations noted that ongoing collaboration and resources will be required to maintain and update the toolkit, and also suggested that there is scope for further research and collaboration to develop other aspects of OER, in particular the searchability and visibility of OER in library discovery services. The White Rose Libraries Innovation Board has proposed an OER working group which will oversee the ongoing development and promotion of the toolkit, identify and assess new opportunities to collaborate further in the field of OER and monitor sector developments.

'The White Rose Libraries Innovation Board has proposed an OER working group which will oversee the ongoing development and promotion of the toolkit'

There is also scope for further work at institutional level, and the survey results and other project findings have already contributed to the development of an OER Policy at the University of Sheffield, which was approved in December 2022.

Working across the White Rose Libraries to plan and deliver the project brought a number of challenges. It took a while to establish ways of working and communicating that were effective for everybody, and there were some technological barriers to overcome to enable us to share data and documentation. The processes for gaining ethics approval and setting up a data sharing agreement were complex and time-consuming due to the involvement of three separate institutions but provided a valuable learning opportunity. The challenges were, however, outweighed by the benefits of sharing different skills and experience, and being able to gather data and viewpoints from a wider academic community in the survey and UX interviews.

The literature review found few items relating to research on OER in UK higher education libraries, suggesting that there is scope for further research and collaboration to support the use and development of OER across the sector. The survey questions used in this research are shared in the Supplemental files for this article and could be reused, and the White Rose Libraries OER Toolkit is also openly licensed.

'The challenges were … outweighed by the benefits of sharing different skills and experience'

Supplemental files: project documents
Project survey questions
Round 1 interviews: thematic analysis
Round 2 interviews: thematic analysis
Round 3 interviews: report
White Rose Libraries Open Educational Resources Toolkit

Abbreviations and Acronyms
A list of the abbreviations and acronyms used in this and other *Insight*s articles can be accessed here – click on the URL below and then select the 'full list of industry A&As' link: **http://www.uksg.org/publications#aa**.

Competing interests
The authors have declared no competing interests.

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