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# Open Educational Resources:

*The value of reuse in higher education*

**Report authors:**

   **David White**
   **Marion Manton**

**Report editor:**

   **Nicola Warren**

**Project team:**

   **David White**[1]
   **Marion Manton**[1]
   **Elizabeth Masterman**[2]
   **Joanna Wild**[2]
   **Nicola Warren**[1]

1. Technology-Assisted Lifelong Learning (TALL), Department for Continuing Education
2. Learning Technologies Group, Oxford University Computing Services

**Contact details**

Technology-Assisted Lifelong Learning (TALL)
University of Oxford
Department for Continuing Education
Ewert House, Ewert Place
Summertown
Oxford OX7 2DD

Tel:     +44 (0) 1865 280978
Email:  tall@conted.ox.ac.uk
URL:    http://www.tall.ox.ac.uk

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# Overview

In an era where laptops, data projectors and a connection to the web are pervasive within higher education, digital resources are becoming an inevitable part of students' learning experience. This report outlines the range of online resources that are being used and outlines how, when, where and why they are being incorporated into learning.

Generally teaching practitioners search for resources that meet a clear pedagogical need within their programmes of study and often use material that they would not otherwise be able to produce themselves, such as videos and animations. Most commonly teaching practitioners are reusing small, stand-alone, resources slotting them into their existing teaching. Significantly, although there are potential time saving benefits inherent in using digital resources, our interviewees spoke about benefits in terms of raising the quality of their courses and the student experience, rather than improving efficiency.

The importance of using resources that have open licenses and therefore can be given the label of 'Open Educational Resources' (OER) varied depending on how public or 'open' the context of use was. However, it was clear that open licensing did make the reuse and repurposing of online resources both simpler and 'safer'.

Overall the use of digital resources to support teaching and learning in higher education is widespread and appears to be standard practice for the majority. Students value the simple curation and validation of digital resources by their tutors which, alongside other forms of reuse, help to steer them through the potentially overwhelming volume of material online. Developing effective techniques for finding, evaluating and using digital resources should be seen as a key digital literacy for both staff and students.

# Introduction

In 2010, the Joint Information Systems Committee (JISC) commissioned the University of Oxford to undertake a study to assess the impact of the use of OER in the UK higher education sector. For the purpose of the study the following definition of OER was used:

> "…teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property licence that permits their free use or re-purposing by others"
>
> **(Atkins, Brown and Hammond, 2007: p. 4).[1]**

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[1] Atkins, D. E., Brown, J. S., & Hammond, A. L. (2007). *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and new Opportunities*. Menlo Park, CA: The William and Flora Hewlett Foundation.

The OER Impact Study ran from November 2010 to June 2011. This report is a summary of the findings of the research, written primarily for teaching staff and those supporting curriculum delivery processes who may not have considered the potential value of OER before. It draws on the detailed findings presented in the *OER Impact Study: Research Report* by Liz Masterman and Joanna Wild.

Between January and May 2011 the study team engaged with strategists, tutors and students in higher education to explore their use and reuse of OER. The title 'strategist' in this context includes members of staff who are responsible for disseminating and embedding new forms of practice in teaching, but who may not be directly involved in teaching students.

The study team conducted interviews and held workshops with staff from 11 universities across the sector. The interviews were designed to gain an understanding of participants' attitudes and approaches to using or promoting the use of digital resources. The workshops investigated the methods teaching practitioners employ when searching for and evaluating digital resources as part of the process of designing a teaching session or module.

The approach of the study was broad and highly qualitative; focusing on what motivates the reuse (or rejection) of digital resources found on the web, and exploring factors that staff and students value in educational content, such as provenance, quality, context and format. This report begins by highlighting some key themes of the use and reuse of OER. It then outlines the study's findings of current practice within the sector and suggests some of the attributes of educational content that are most valued by stakeholders in a range of contexts. It also describes approaches taken by staff when searching for educational content online and some of the ways in which they incorporate resources into the curriculum. The report concludes with the study's recommendations around enhancing teaching practice, supporting learners, improving services and further research.

# Use and reuse in context

Our study indicates that reuse of online content for teaching and learning is widespread. However, the position of OER within this practice requires explanation. This section highlights five key things you should know about OER and further explores some of these themes in the context of our research.

## Five things you should know about OER

1. **The term OER is broad and still under discussion**
   For some, the most important aspect of OER is that resources are given an open licence that allows duplication and some level of editing and repurposing of the material. For example, editing sections of video, cropping an image, or editing text. For others, the most important factors centre on the educational 'intent' in the resource; whether it has been created with inherent pedagogical value or structures. Overall, there are still questions and debate around the value of 'openness' as a general principle; how openness is realised, and the way in which the attributes above influence the particular 'flavour' of openness being promoted.

2. **OER come in all shapes and sizes**
   OER range in size from a single image to full courses and almost everything in between. Hypothetically, just about anything can be used as a resource in the service of education, which means that if licensing is not taken into account it is easy to conflate the notion of OER with 'anything I can get from the web and use in my teaching'.

3. **Licensing is important**
   The range and nature of digital resources online and the sheer number of communication and broadcast channels freely available have fundamentally changed the nature of academic practice. The education sector as a whole is increasingly participating online either by using web-based resources to support face to face learning or delivering education in the form of blended or fully online courses. Given this, the need for clear licensing is becoming more important and is the most straightforward indication to those reusing or repurposing resources that they have the right to do so. Open licensing makes clear the distinction between those resources that can be used for 'free' and those that we are 'free to do what we choose with'. The most commonly used form of open licence is Creative Commons (for further information see: http://creativecommons.org).

4. **The difference between use and reuse**
   From an individual's perspective, a digital resource might only be used by them once, whereas the resource itself may have been used many times before by others. In this report we mainly use the term 'reuse' to cover all instances of 'use', as it is unlikely that a digital resource that is available online will only ever be used once by a single individual in a unique context.

5. **Sharing and reuse are not new**
   Many of the concepts discussed in this report hold true for paper-based resources and pre-OER electronic resources. What is new is the level of choice and availability, and the range of formats in existence. The resources that their home institution owns or subscribes to no longer have to be the primary source of information for staff or students.

If you are new to the concept of OER and want to find out more, we recommend that you explore the JISC Open Educational Resources infoKit, which is available at: http://bit.ly/oerinfokit.

# Licensing

OER are usually distinguished from the broader swathe of content on the web by the fact that they are openly licensed making clear the range of repurposing and reuse that is permitted. Often the value of open licensing digital educational content lies in the opportunities it affords practitioners to legitimately reuse or repurpose materials without expressly seeking permission to do so from the rights holder. This is a crucial factor in allowing reuse to take place in highly visible contexts, such as for online distance learning courses, for materials licensed for delivery in a remote campus or by another organisation, and when creating OER of whole sessions or modules. These 'big' OER can incorporate 'smaller' OER content from many sources which are then re-released as part of the larger resource.

Highly visible reuse requires that the rights of all 'component' resources are cleared so that content can be incorporated and made available without restrictions.

> "It's got to be CC [Creative Commons] or we're not using it. Because that just removes all the complexities."
>
> **Strategist**

However, the vast majority of teaching and learning activity in higher education takes place at the level of individual practice (by both staff and students), which is often not visible to those outside a given course or department. PowerPoint presentations, for example, are seen as low risk for the most part and online resources reused in a VLE are usually linked to, rather than copied or repurposed. In either case there is little concern about the legal technicalities of reuse and often little or no awareness of them.

This is not to say that staff and students do not consider the intellectual property of resources they use; they are simply less aware of the intricacies of copyright. In fact it is a widely held view that it is acceptable to use any resource discovered online provided it is correctly cited. Thus the following is a fairly typical response to the question 'What is an Open Educational Resource?":

> "Anything that I can identify, that I can scavenge from somewhere else, that might make my teaching a little bit easier."
>
> **Tutor**

As illustrated in Figure 1, reuse across an institution can be likened to an iceberg. Above the surface is a small amount of highly visible licensed OER that officially bears the name of the institution and below the surface, often invisible beyond a specific course, is a much greater volume of reuse of other 'non-OER' digital resources by staff and students.
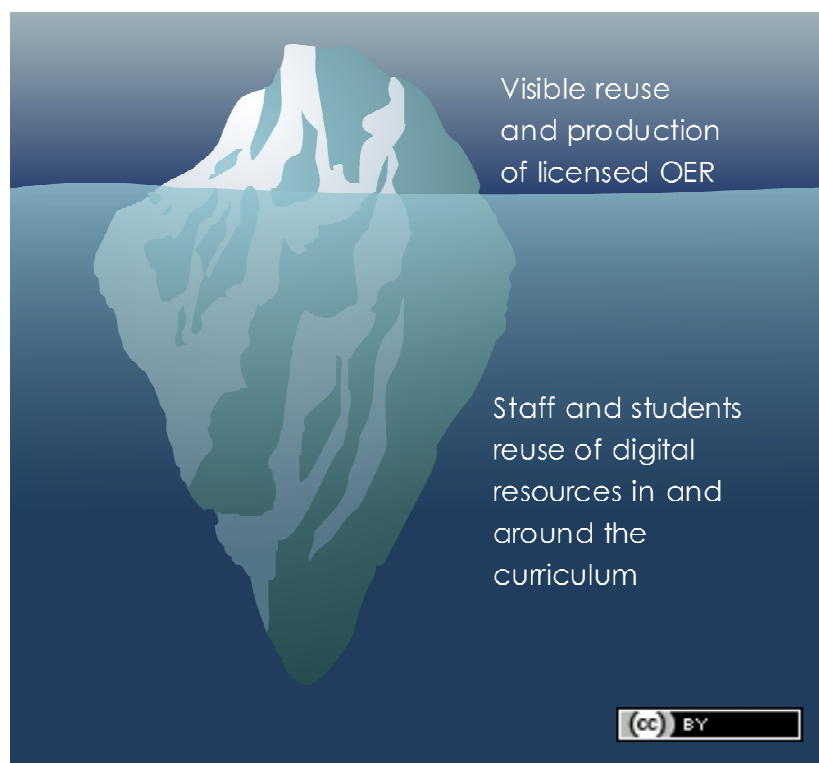


*Figure 1: The iceberg of reuse. The majority of reuse takes place in contexts that are not publicly visible.*

# The landscape of reuse

Figure 2 illustrates the current landscape of reuse within the higher education sector. The diagram has been divided into quadrants for clarity, but it should be noted that the quadrants are not hard-edged and in practice blur or blend in to each other.
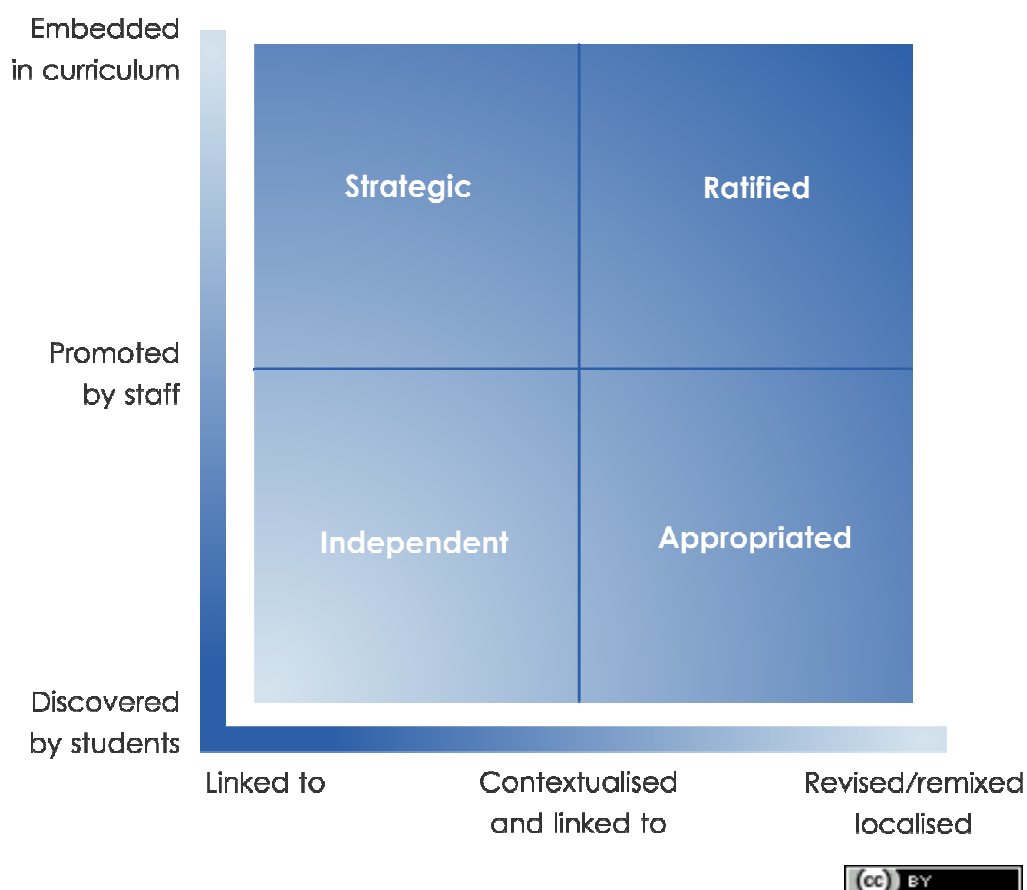


*Figure 2: The landscape of reuse in higher education.*

Typical activity taking place in each quadrant might be as follows:

**Independent:**
This quadrant includes resources discovered independently by staff and students in the course of their teaching and learning activities. Students may find these resources in locations that have been recommended to them by their course tutor or they may locate them as the result of using a search engine, such as Google. There is every possibility that resources found in this manner circulate amongst students, but do not become visible to course tutors. Towards the top of the independent quadrant would be tutors linking to resources in the institution's Virtual Learning Environment (VLE) as supplementary resources or referring to them in teaching sessions.

**Strategic:**
This quadrant includes resources that are very useful in supporting the teaching of key concepts or skills and that are likely to have been contextualised by the tutor to embed them pedagogically in the structure of the course. An example might include a high quality animation that a tutor has provided a link to and asked students to use as part of a specific learning activity for their course.

**Appropriated:**
These are resources that are being reused in a pedagogically similar manner to those in the strategic quadrant, but that have been copied and stored on an institutional platform, rather than linked to. There is also the possibility that they have been repurposed or edited to fit the exact needs of a course. At this point, open licensing can become a factor. Resources that students use in written work or presentations also tend to reside in this quadrant.

**Ratified:**
These are the resources highlighted in the previous section of the report that sit at the tip of the iceberg of reuse (see figure 1). It is crucial that they are properly licensed as they will be closely associated with the reputation of the institution.

During our study, we found that a significant amount of reuse was taking place on the blurred boundary between the independent and strategic quadrants. This type of reuse is becoming common practice for tutors as a form of guidance to help students find their way through the abundance of content on the web.

> "I see my role as being the gatekeeper of the things that they [students] should be seeing; otherwise they can waste so much time."
>
> **Tutor**

The majority of students to whom we spoke indicated that simple curation and recommendation of digital resources from across the web in their institutional VLE was an important, trusted source of information and a key starting point for their research.

> "…we need the lecturers to then draw a line and say, no, actually, …follow this link."
>
> **Student**

The study also encountered examples of reuse in the 'appropriated' and 'ratified' quadrants, although this was much less common than the types of reuse in day-to-day teaching practice. Activity in the 'ratified' quadrant was significant to specific institutions who were positioning themselves as providers of open resources, some of which were constructed using smaller OER drawn from other sources. There was only one example of wholesale reuse or repurposing of a large scale session or module level OER.

Even with recent OER production initiatives the relative volume of licensed OER to non-licensed, but nevertheless educationally useful, online content is small and, as a result, the majority of reuse inevitably involves content without open licences. A general lack of knowledge about licensing and the lack of repercussions if reusing non-licensed resources meant that most of the teaching staff who participated in our study, who had not previously been involved in an OER production project, spoke about reuse primarily in terms of relevance to their teaching needs. The subject of copyright remained largely in the background, unless explicitly raised.

## The importance of 'E' as well as 'O' in OER

There are many attributes of digital content beyond licensing that enhance its value to teachers and learners. Availability is of course crucial and is what many think of as the main factor in the notion of 'open'. More important still is the potential educational value of a resource. Figure 3 below maps the 'open' landscape in terms of both learning and teaching practices and learning content. OER sit at the intersection of these two areas, their value being realised as they are reused in a variety of ways.

Open (learning & teaching) practices

Qualities of open (learning) content

Opening up content to students not on campus/formally enrolled

Sharing and collaborating on content with other practitioners

Reusing content in teaching contexts

Using or encouraging others to use open content

Making knowledge publicly accessible

Teaching/learning in open networks

Openly licensed

Highly discoverable, freely available

Open platform, technically repurposable

High value production (e.g. multimedia)

Accessible design

Educational purpose/designed for learning

Quality assured/reviewed

Trusted provenance/brand
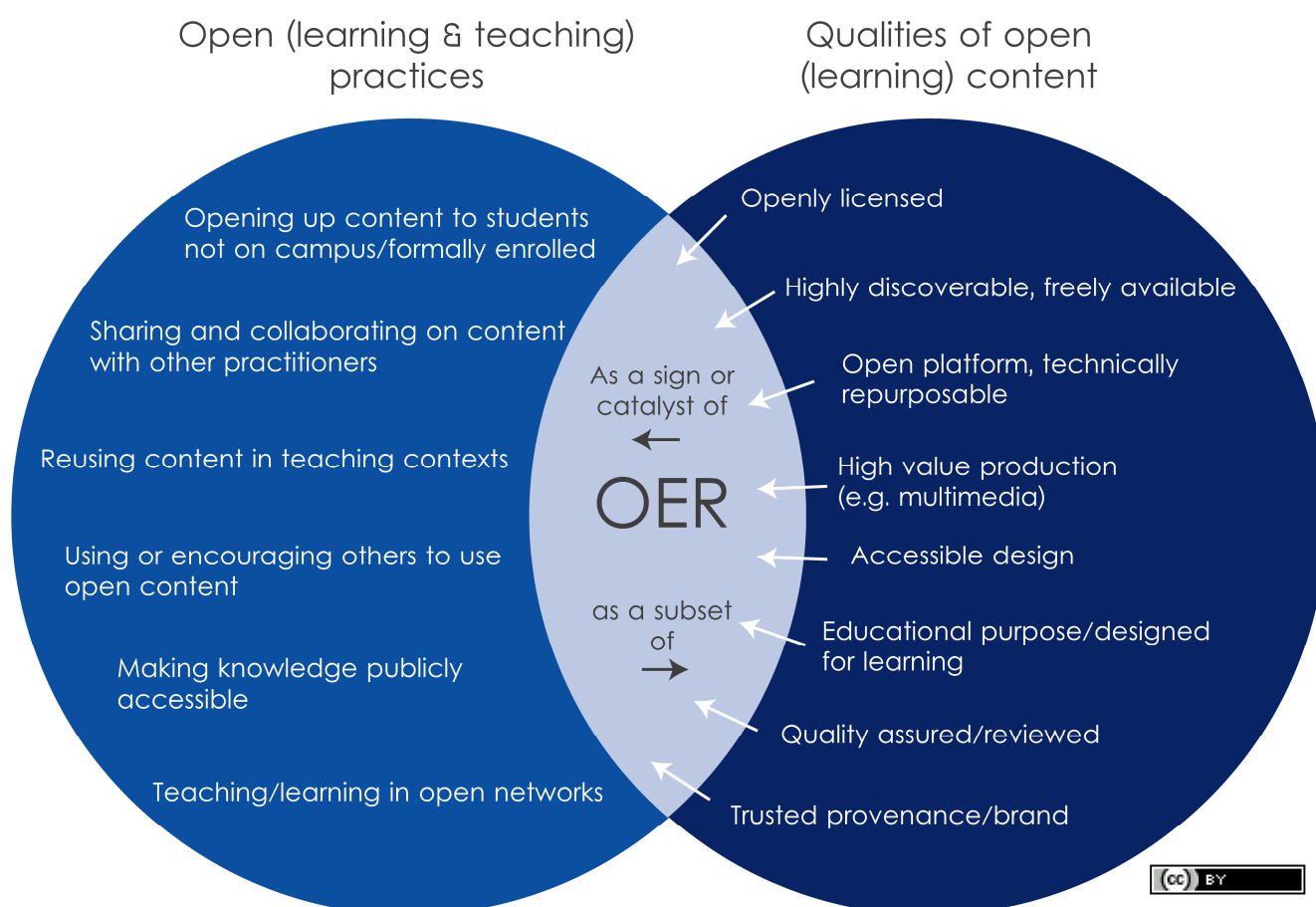
As a sign or catalyst of
←
OER
as a subset of
→

Figure 3: Qualities of open practices and open (learning) content:
Helen Beetham, JISC OER Synthesis and Evaluation team
(http://oersynthesis.jiscinvolve.org/wp/2011/06/04/update-on-open-contentopen-practices/).

The importance of many of the features on the right hand side of the diagram was repeatedly confirmed by tutors, strategists and students during the interviews and workshops undertaken by our study.

For teaching staff, the subject relevance and pedagogical 'fit' of a resource to their teaching strategy was the key factor. Licensing, while a secondary concern, was also valued. Academic staff said they had great respect for the intellectual property of others and found the 'all clear' a licence gave them to copy resources into their own VLE, and occasionally edit them, very helpful. Students were mainly concerned that resources were 'on topic' and 'accurate'. They were also nervous about the risk of plagiarism, which some had trouble distinguishing from copyright issues.

Content produced with an 'educational intent' by universities was highly likely to match some or all of the attributes in figure 3 above. University or education-related provenance was also used as a general indicator of quality, with tutors often investing more time in sourcing resources from trusted providers.

> "I would probably look to see what I regarded as the leaders in the areas that we were looking at. So MIT is an obvious leader for engineering. I'd probably look at Imperial, I'd probably look at Cambridge to see what they were doing."
>
> **Tutor**

So while most definitions of OER include open licensing as a central attribute, to discuss only the reuse of licensed resources in this report would produce a highly skewed picture of current practice. Therefore, our study considers the reuse and potential educational value of all the forms of digital resources we encountered in our study.

# Reuse in practice

Reuse takes place in the broader context of academic practice and can be understood by a consideration of how academics decide to engage with reuse; where they find what they reuse; how they choose what to reuse; how they integrate what they find within their teaching; and how reused content is delivered to students. This section presents the findings of our research organised in five sections representing the five Ds of reuse - Decide, Discover, Discern, Design and Deliver.

## Deciding: What factors influence the decision to reuse?
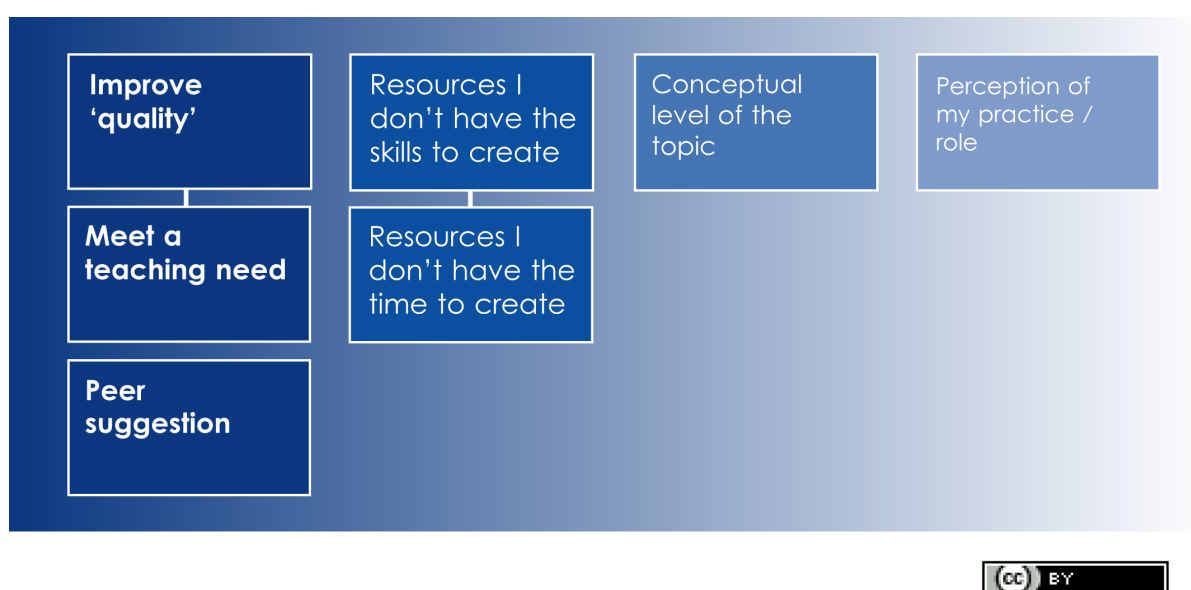
*Figure 4: An outline of the key factors influencing tutors' decisions about reusing content. Factors on the left of the diagram were said to be of most importance.*

Reuse of others' content is a longstanding part of teaching practice and the evidence suggests that reusing online content and resources is becoming increasingly normalised as technology becomes part of everyday life. The ubiquity of digital technology is paving the way for new forms of knowledge creation and open academic practices. Within this, reuse seems to take place largely in response to an immediate pragmatic need to address a particular teaching challenge.

> "Really, it is large class sizes and wanting to give students somewhere they can go to prepare for my classes or to reinforce what they've covered."
>
> **Tutor**

Often tutors look for resources they know they need, but may not have the skills or time to develop themselves. Another strong motivation for reuse is the principle of not 'reinventing the wheel'.

> "I have always looked for, in principle, OER stuff before it was called OER, and I will continue to do that until I die. Because it's that bit of not recreating the wheel and to be stimulated by my peers as to their orientations and perspectives, and that I always have the eternal hope that it could act as a catalyst."
>
> **Tutor**

If tutors were consciously searching for OER as opposed to useful online content, this was largely as a result of exposure to the concept through institutional or wider approaches to promoting OER use, generally delivered via existing structures for professional development and support.

It is perhaps unsurprising to discover that attitudes towards reuse differ across the disciplines and institutions. Personal and professional identity is also a factor, with some evidence that professional identity is becoming less tied to delivery of content and more to shaping a learning experience.

> "It's one of my few talents that I know what I want the students to know and I'll try and think up solutions to learning problems and then start shopping around and seeing, well, is there anything that will help me get there?"
>
> **Tutor**

There were indications that those who were actively engaged in a professional community, online or face-to-face, whether based around subject, institution or otherwise, were very likely to reuse. The key factor here is the trust placed in resources recommended or produced by colleagues within these communities and the existence of a network which disseminates relevant resources. It may also be the case that those with a social model of knowledge are more likely to engage with communities of this type and are more likely to be comfortable with sharing and reusing resources.

> "I think everyone in the University does this local sharing with colleagues, emailing things around. "Have you seen this resource?" "Use this presentation" etc."
>
> **Tutor**

Most tutors value what online resources can offer them, and believe that ingenious reuse can improve quality, by providing opportunities for students to engage with challenging aspects of their subject in ways that would otherwise not be possible.

> "I was showing my students yesterday something called BioVisions from Harvard University, which is a really, really detailed animation of the inner workings of a cell. There's absolutely no way any institution could prepare that unless they'd invested a lot of money in animation, in animators who work within these science departments."
>
> **Tutor**

However, even in these circumstances, reuse is rarely seen as a time-saver in the short term. The benefits are largely viewed in terms of ongoing quality improvement rather than 'efficiency', although it could be argued that repeated reuse of the same resource year on year does have a time-saving effect.

> "But what you're probably doing is just adding richness to your course. You're probably spending just as long. I would never imagine it'd save time, it's just that you carry on just getting it better and better."
>
> **Tutor**

With long standing delivery models such as team teaching predicated on it, reuse is perceived as broadly unproblematic as a practice. However, when asked to consider potential inhibitors to reuse, several interviewees mentioned a fear of negative student perception of extensive reuse, especially given the as yet unknown effects of changing funding models.

> "If I signed up to an institution, and, you know, all the materials had come from elsewhere, I'd ask questions about that … It contradicts the credibility of the institution, really, doesn't it?"
>
> **Tutor**

Another perceived threat was having the teaching role reduced to teaching 'packaged' learning experiences on to which tutors were less able to stamp their individual style. Certainly the evolving nature of academic practice and the role of the tutor needs to be considered if a high level of reuse is planned for.

> "The biggest challenge we are facing is that lecturers see themselves being written out of the picture."
>
> **Tutor**

There were mixed perspectives on students' expectations of the media production quality of resources that were being reused, and whether this was an important consideration when deciding to reuse.

> "You've got half of the class that don't care what it looks like, they just want to get their answer, and they actually prefer the YouTube look almost … Then you've got the other half of the class who regard that as being shoddy."
>
> **Tutor**

This question of production quality probably focuses more on perceptions of how 'professional' a resource appears to be and how that reflects on a tutor's reputation, rather than on its pedagogical value. One tutor did mention that she becomes less concerned about production values when teaching students in the later stages of their course, at which point they are more capable of seeing the educational value of a resource.

> "I've used some stuff in fourth year that isn't particularly polished and I wonder if that's because I know that the students can differentiate and they're not looking at the level of polish… They can get beyond that."
>
> **Tutor**

Certainly, this is reflected in the fact that many lecturers will compromise if a resource is 'good enough'.

> "You … check it out and say to yourself: 'if I was designing from scratch, is this the way that I would do it?' Sometimes the answer's pretty close to being yes, other times it's not. But a lot of time you just end up saying: 'Well it's close enough and it's better than nothing.'"
>
> **Tutor**

Overall our evidence suggested there is little need to convince academics of the value of reuse.

## Discovering: How are resources found?
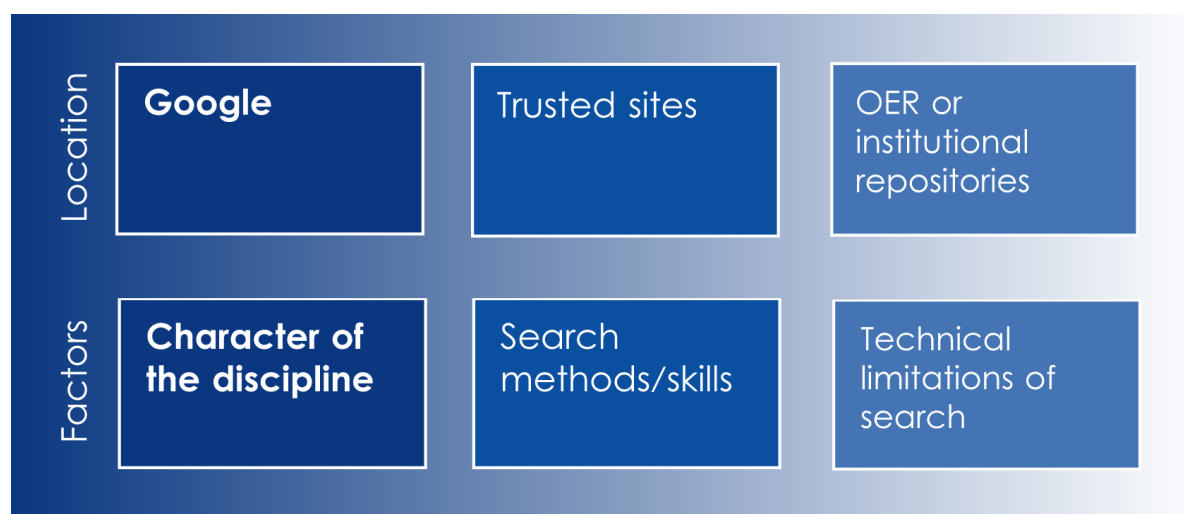
*Figure 5: The places tutors go to seek OER resources and the factors that influence how resources are discovered.*

> "If we knew it was there and we could find it we would use it."
>
> **Tutor**

Finding the hoped for volume of suitable online resources to support their teaching still challenges academics. This is not due to a single cause, but seems to be equally a result of technical issues around search engines and repositories, practical searching skills and the volume of available resources in different subject areas.

> "…we know they're out there; it's just that we're expecting to get more."
>
> **Tutor**

While discoverability is probably the major barrier to reuse, tutors still expect to find useful materials online and are prepared to spend time searching for them.  Gaining realistic expectations of what is available on the web and refining search methodologies is a key digital literacy for both staff and students.

It is not a surprise to discover that subject discipline may affect how likely academics are to find materials to reuse. While our workshop sample was small, there is clearly some emerging evidence, as illustrated in figure 6 below, that some disciplines offer a significantly higher return on search effort than others. Certainly, academics teaching in interdisciplinary

areas may face greater challenges in identifying useful materials, or possibly require more support in understanding what they might use and how.
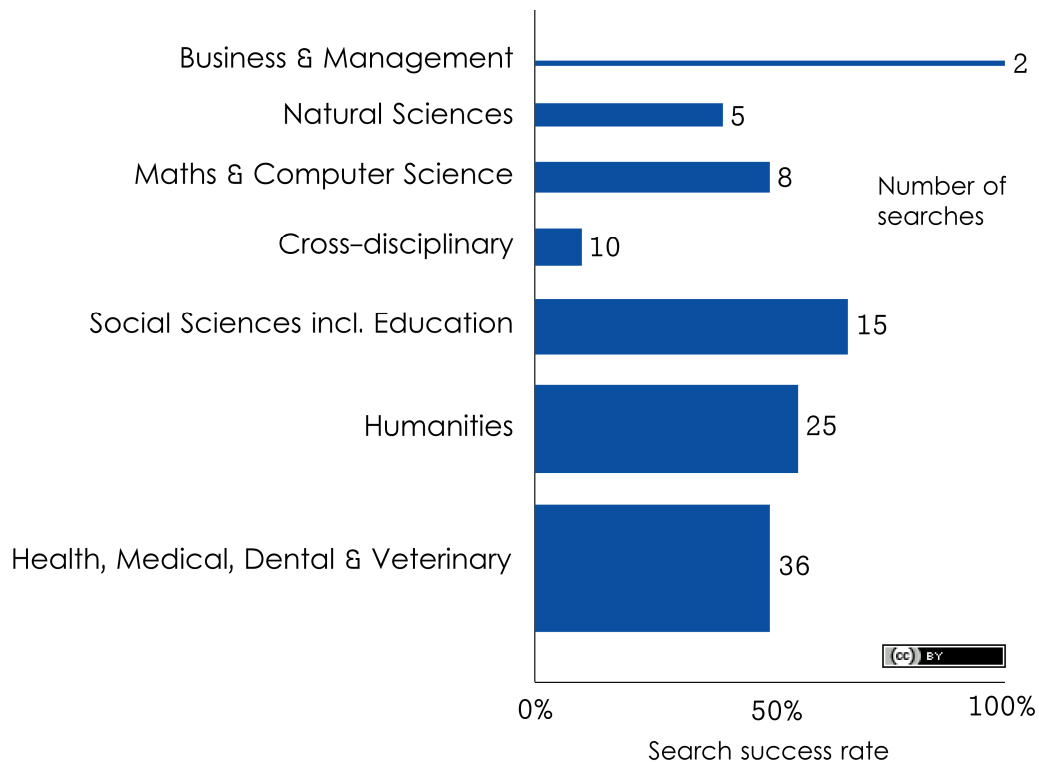


*Figure 6: Percentage of successful searches by discipline area (and total number of searches per discipline area) from the OER Impact Study workshop.*

Our research also indicated that the value of specialised OER repositories or portals over the wider web was variable. The sheer volume of information available via Google and other search engines makes them the best starting point for many.

> "If I was looking for something new, I would just do another Google search, rather than have an expectation that there was somewhere that I know is good."
>
> **Tutor**

However, practitioners in subjects such as nutrition, where there is a deluge of popular, non-academic content or even misinformation on the web, may find repositories a more productive starting point.

> "…if you go via Google you have to go through … 100 bad videos to find one good one … I can be there for a good hour before I find something, which is quite tedious."
>
> **Tutor**

It is also worth noting that some "OER portals" (sites which curate links to or aggregate sources of OER) cannot necessarily be relied upon to always return licensed OER, adding to a confusing picture for academics. To understand this further it is necessary to examine how academics discern which resources will be valuable.
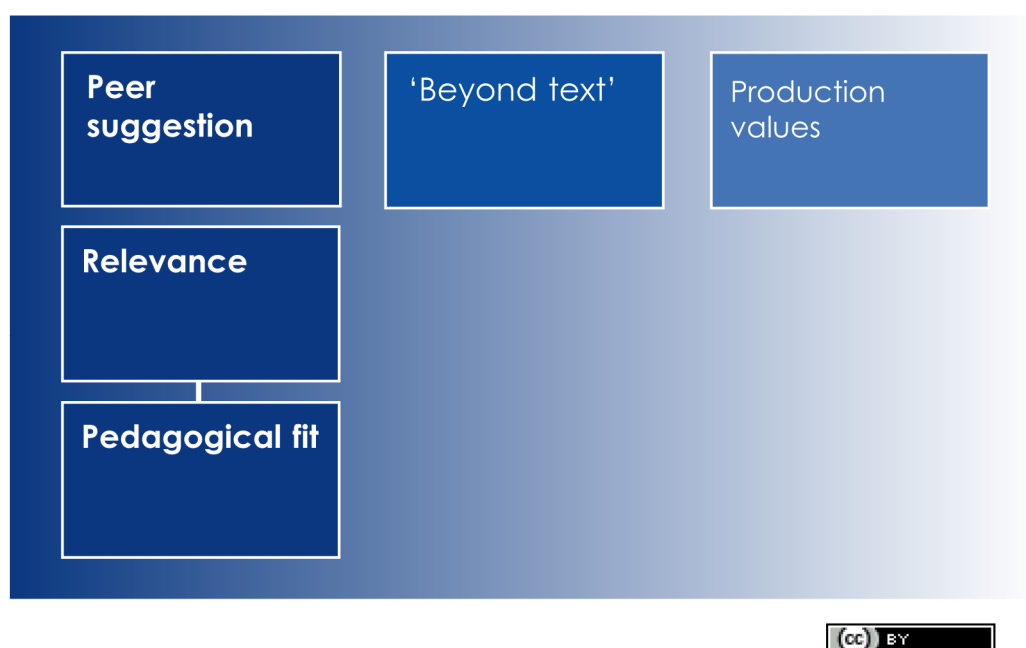
## Discerning: How are resources chosen?

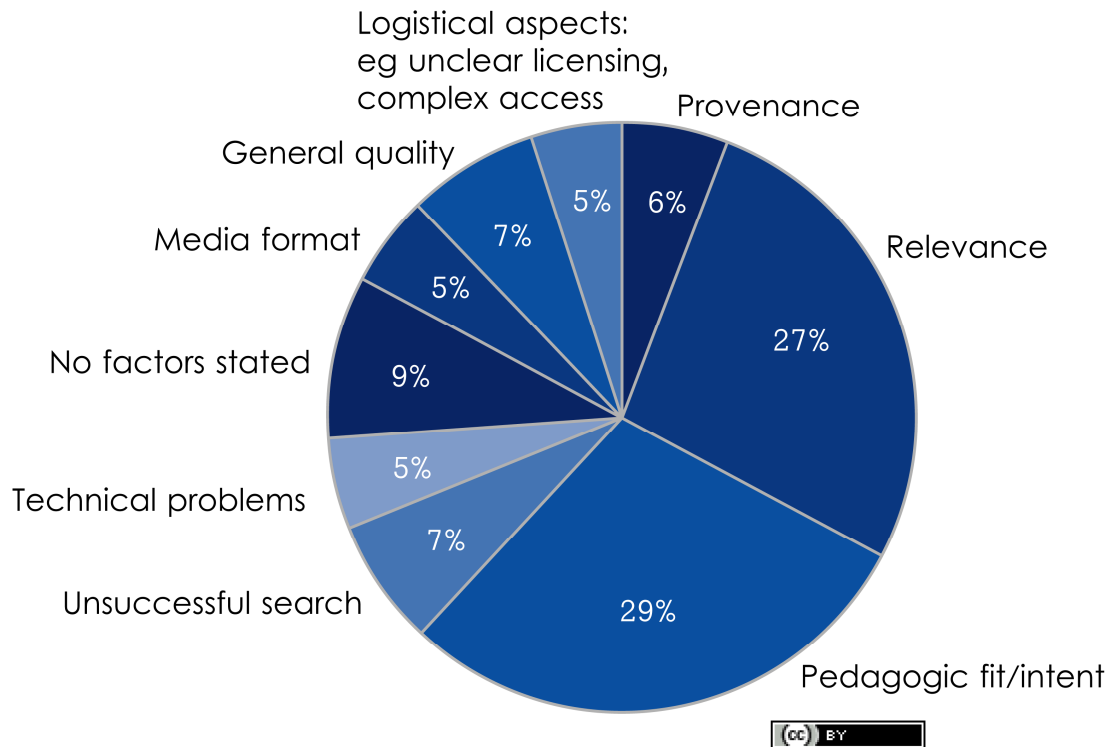*Figure 7: Factors tutors consider in selecting resources to use.*

> "[It's] academic judgement or it's more sort of about a gut feeling that it's the best way to do it."
>
> **Tutor**

Academics are confident in judging content, and see it as a core competency. Figure 8 summarises the responses given by participants at our workshops, when asked to specify the key factor influencing their decision to use a resource.

Logistical aspects:
eg unclear licensing,
complex access

General quality

Media format

No factors stated

Technical problems

Unsuccessful search

Provenance

Relevance

5%

6%

7%

27%

5%

9%

5%

7%

29%

Pedagogic fit/intent

*Figure 8: Reponses provided by the OER Impact Study workshop participants when asked about the factors influencing their decision to reuse a specific resource.*

Peer networks and offline suggestions are also an important source of recommendations. There was also evidence, from both tutors and students, that trusted sources such as academic, government, and NGO sites (e.g. the BBC, NASA, iTunes U, and academic websites, i.e. those with domain names ending with ac.uk) are valued over the "commercial" web.

"It's my first port of call now, Jorum. I'm on it all the time, looking for stuff... I can find really good stuff in there."

"Coming from a British university, for me, is fine. Why do I trust that more than some of the commercial sites? I don't know. That's odd, isn't it? I think the university brings it that stamp of authority and quality, and often it's been peer reviewed."

**Tutors**

It was also identified that larger scale OER have the potential to offer real support for those teaching out of their core subject, as long as those staff have the time to evaluate a resource as trustworthy.

"I was doing some lectures on nutrition and obesity, and I wanted to cover the genetics, but that's not my area, so I went on and found a module on genetics of obesity … But my evaluation process was longer."

**Tutor**

Figure 9 shows the results of our pre-workshop survey, which asked participants what kinds of resources they currently reuse.
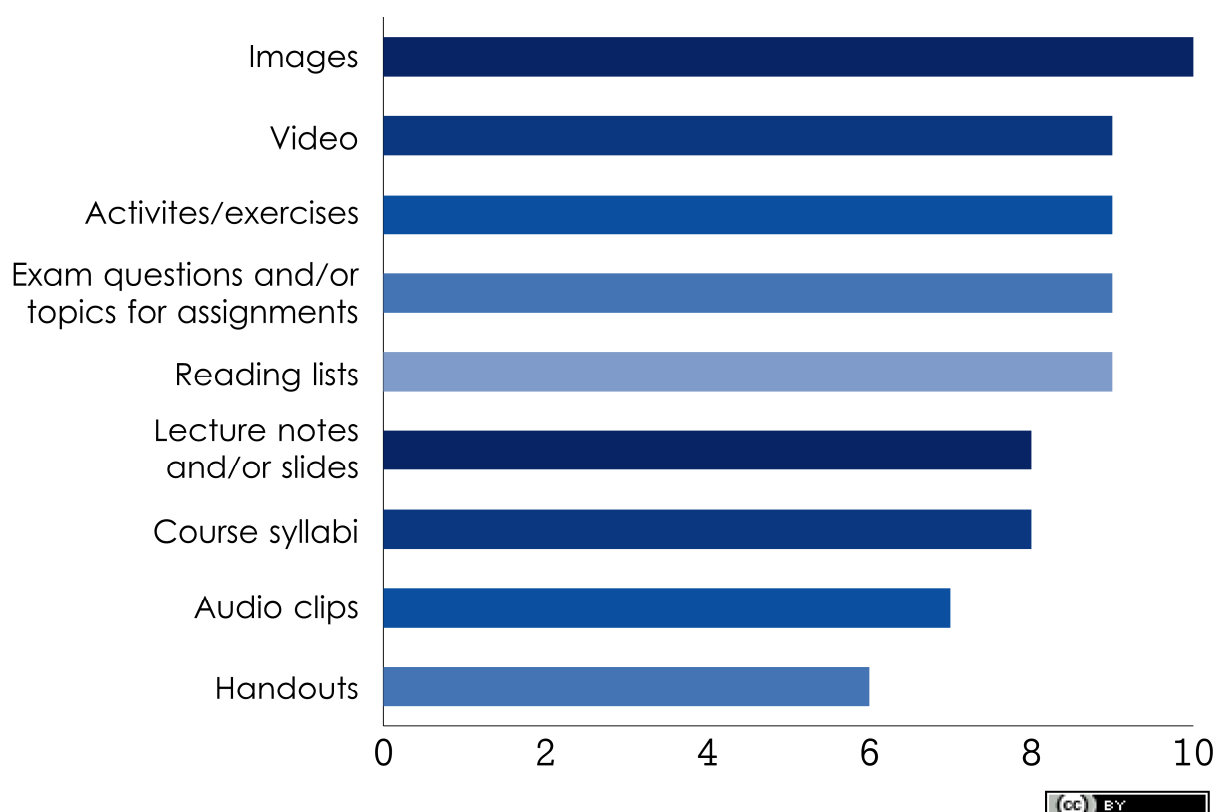


*Figure 9: Material currently being reused by tutors, as identified in the OER Impact Study pre-workshop survey.*

In terms of volume of reuse there seems to be a trend towards resources that the majority of practitioners can find time-consuming to produce, or which they may lack the relevant media production skills to create themselves, such as diagrams, videos and multimedia. These findings were reaffirmed consistently across our interviews and workshop focus groups.

"I tend towards animations because they are very powerful in terms of their ability to teach dynamic situations."

> "…a lot of the OER I grab off the web is to allow me to explain things in a visual or in an interactive way so that they [students] can interact with things. And the things that I create similarly are to do with allowing them to interact."
>
> "I want something to support me, like a video clip, which I won't have the time to do or probably the expertise to do…"
>
> **Tutors**

While these types of resources provide something additional for students, there are also suggestions that their value is linked to the ease with which they can be incorporated and/or evaluated.

> "I think it might be slightly easier for me, because I think I tend to go for resources that are visual, so animations, photographs, so you can look and see if it delivers what you want it to do. I have downloaded … text-based resources and I think for me that they take a little bit more time to evaluate."
>
> **Tutor**

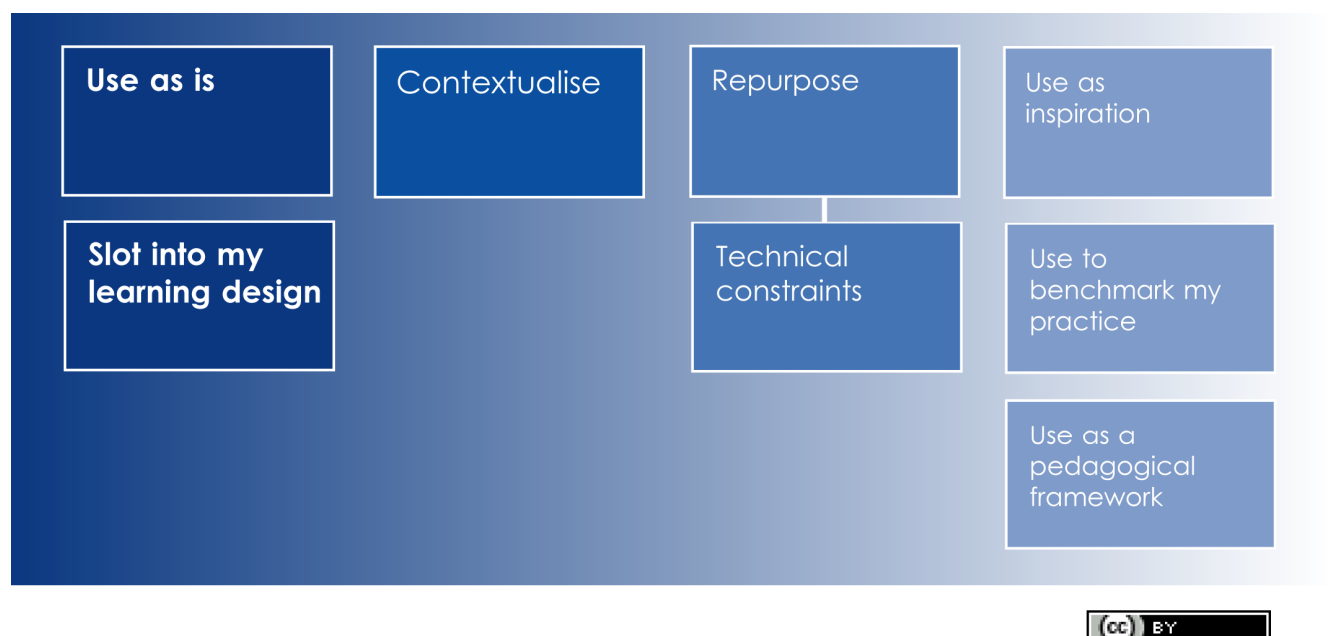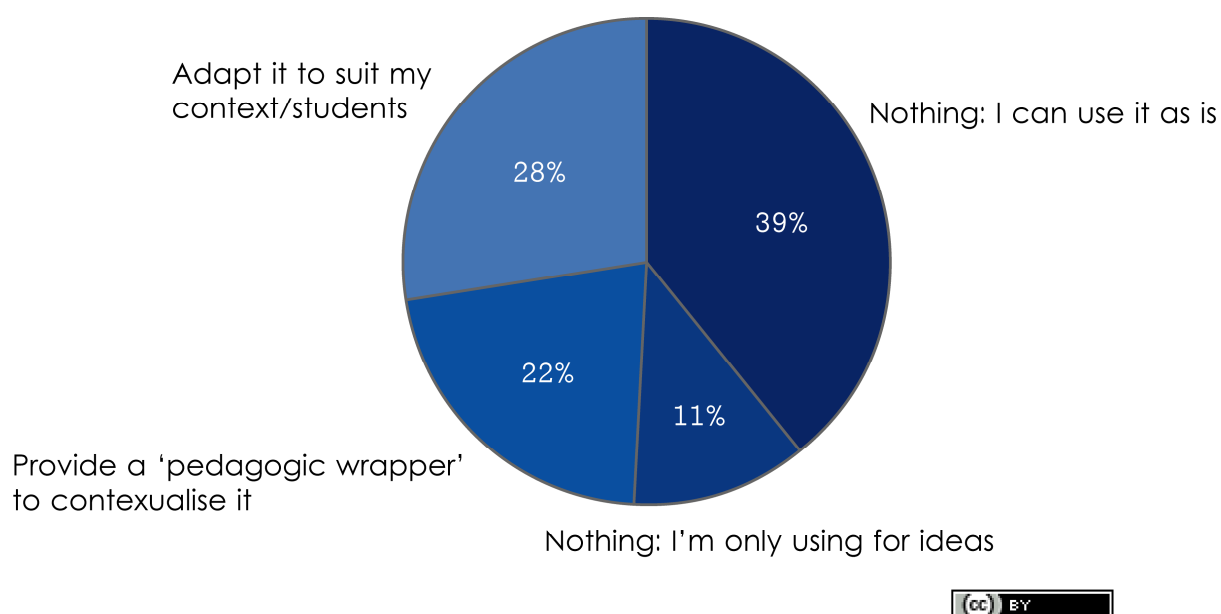# Designing: How are resources integrated into teaching?



*Figure 10: Ways that teaching staff use OER resources.*

> "I know exactly where it would fit into the context of the course that I have in mind. I would be much more comfortable with small pieces so that I can control the context, so that I can assemble the framework myself."
>
> **Tutor**

Online resources are used by academics in a variety of ways, with the use of small items of content to address a specific teaching need being the most common form of reuse. Figure 11 shows the results received when we asked the participants of our workshops the question "What would you need to do to this resource to reuse it?".

Adapt it to suit my context/students

Nothing: I can use it as is

28%

39%

22%

11%

Provide a 'pedagogic wrapper' to contexualise it

Nothing: I'm only using for ideas

*Figure 11:  Reponses provided by the OER Impact Study workshop participants when asked the question "What would you need to do to this resource to reuse it?" following a successful search for an OER.*

This is a small sample, but the results do reflect some prevailing themes from our interviews. In terms of practical integration, academics are most likely to use a resource unchanged, although a significant number would go a step further and provide additional information in order to contextualise the resource for students.

> "I will post it to my virtual learning environment site ... and I would give a little sort of paragraph underneath the link trying to tell the students how to use this resource".
>
> **Tutor**

Where materials are fully embedded in courses, repurposing does take place if the effort is deemed worthwhile; however this activity is an uncommon form of reuse in individual teaching practice.

> "We've got this quite strong push along the lines of repurposing, remixing in principle, which takes quite a lot of effort to even give people the opportunity to start doing that, but evidence of whether that is a viable approach in terms of time and effort or efficiency is not there."
>
> **Strategist**

We also found evidence of reuse in less tangible but just as powerful forms, for example, for professional benchmarking or as a form of inspiration. In these cases value accrues in the form of staff development which, while not easily tracked, is likely to improve the quality of the programme of study.

> "I'd be looking at level-appropriate sort of [resources] to find learning outcomes to make sure that I was creating something that looked equivalent or better."
>
> "I think it is a great source of ideas and imagination."
>
> **Tutors**

Deciding how to integrate is influenced by many factors, with teaching considerations, such as the need to review materials, paramount in some situations, and technical constraints proving the decisive factor in others.

> "What I tend to do is use the animations in lectures, and then provide the animation directly on Blackboard, or a link to it if it's not something that exists here. And say to them, "go away and review that in your own time"."
>
> "I wouldn't know where to begin in terms of modifying animated video."
>
> **Tutors**

The intended use has some impact on the type of resources used. While workshop participants reported reusing meta-level resources such as course syllabi and activities (see figure 9 above), this was not reencountered in our interviews to any significant degree. This might be attributed to a perception by tutors that these materials are not online learning resources, or possibly the fact that these kinds of resources are used more for benchmarking or inspiration, and therefore were not considered in the context of our interview questions.

> "Some of the material I looked at and found, I thought, "that is really nicely laid out, it doesn't apply to my field" but what you could do is say, "that's a good structure and I'll lift that over and I'll just bring in examples and embellish it with, you know, the appropriate material"."
>
> **Tutor**

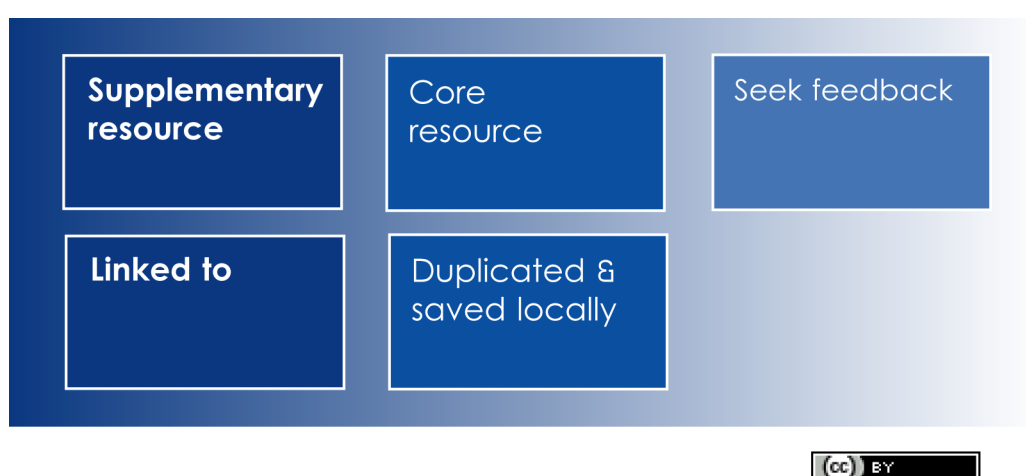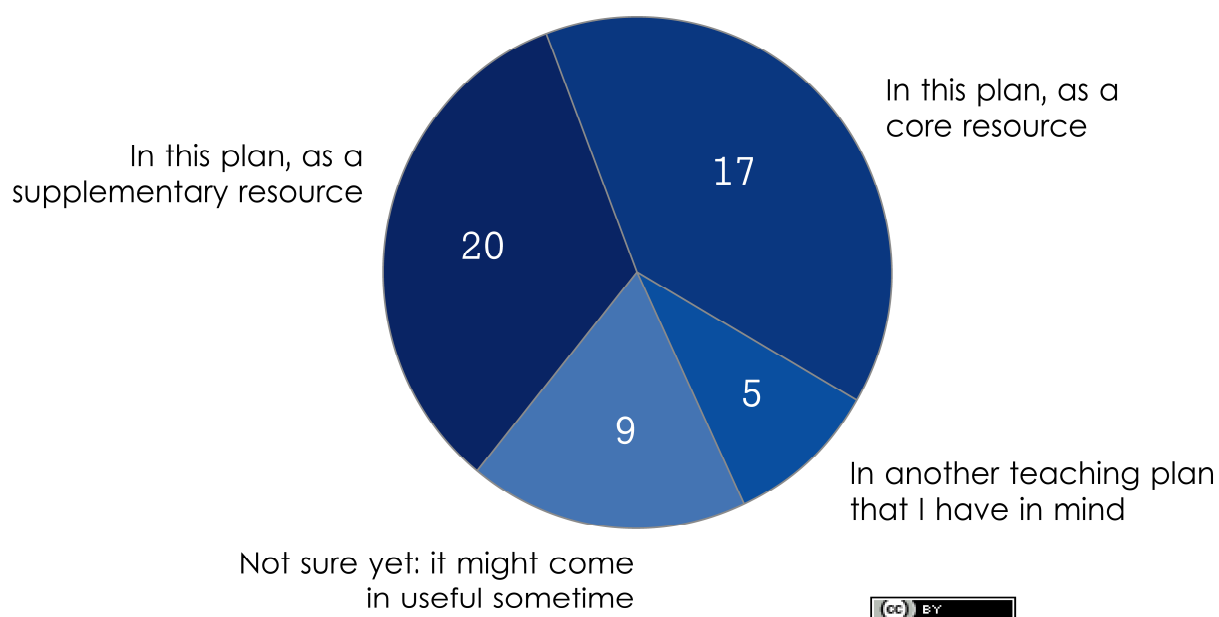## Delivering: What happens when resources are used?



*Figure 12: How OER are delivered to students once the tutor has made the decision to use them in a course.*

Most online resources are integrated smoothly into the wider teaching and learning experience, making them effectively invisible within a course. It appears that the majority of reuse within a VLE is technically implemented through linking out, rather than copying materials and bringing them into an institutionally owned platform. This is often due to uncertainty about copyright implications. However, tutors are aware that this practice has its own limitations.

> "The problem with links is they can be dead, whereas if you download it then it's never dead, it's always there but then of course you have copyright issues because you are essentially copying it."
>
> **Tutor**

Our workshop data indicated that the position of OER in teaching is fairly evenly spread across use as a core or supplementary resource, as shown in figure 13 below.

In this plan, as a core resource

17

In this plan, as a supplementary resource

20

5

In another teaching plan that I have in mind

9

Not sure yet: it might come in useful sometime

(cc) BY

*Figure 13:  Reponses provided by the OER Impact Study workshop participants when asked the question "How would you embed this resource in your curriculum?".*

There is also evidence that the type of content affects the way content is integrated.

> "The larger chunks are used effectively for reference but they are not embedded in curricula.  The smaller granules, the small items, even to the level of [single] assets, are embedded."
>
> **Tutor**

Fit to the student is a significant factor in judging the suitability of a resource.

> "Well, I use the students a lot in... what do they like?  What do they enjoy? ... what motivates them?  What do they find useful?"
>
> **Tutor**

Where academics commented on explicit feedback on their OER use, it was as one aspect of feedback on the course as a whole.

> "...they'll comment that the module is better than other modules".
>
> **Tutor**

23

Certainly our evidence suggests that students see the use of online resources as a normal part of their experience of study, and especially value the curatorship provided by their tutors in the form of recommending and linking to resources.

> "…if the professor has recommended it, then we trust it."
>
> **Student**

Within this, there was little indication of what the student reaction to extensive reuse might be and, when asked, students appeared not to have considered the idea. When prompted, there was mixed reaction to the prospect of extensive reuse.

> "I do have certain expectations if I come to a university; I expect them to know something, to teach me something from their own, not … everything from other people, otherwise there's no authenticity to that."
>
> "I think it's perfectly okay.  If the lecturer, who is the person who's trained in everything, if they think it's a credible enough source and they think it's good enough, and that they think that they can't do better than this source, then we should … have access to that source."
>
> **Students**

This suggests that setting expectations will be key to how this practice is perceived in the future.

# Conclusions and recommendations

*Recommendations 1 to 6 are specifically aimed at those directly involved in teaching and can be acted upon directly by individual practitioners or by course teams.*

## Enhancing teaching practice

From lecturers' perspective, the value of online resources may lie more in enabling them to enrich their students' learning experience than in saving time developing resources themselves. Exceptions are 'big' OER and instances where lecturers lack the requisite skills and technical resources to produce rich media resources. Of course, reusable digital resources can provide a 'quick fix', but currently it is inadvisable – and misses the point – to approach the search for online resources on the assumption that this will save time.

R1: Approach online resources primarily as a means to enhance your practice, not necessarily as a way to develop a course more quickly.

Our research re-emphasised the value of contributing to professional networks or communities, since the most relevant or useful online resources are often those that are recommended by others in the same field. That said, teachers do have valid requirements for resources that cut across disciplines, and so interdisciplinary communication and collaboration are also to be encouraged.

R2: Adopt an open approach to your academic practice, seeking to share resources and ideas both within your disciplinary community and beyond it.

## Supporting learners

As students progress through their course they should become more confident at finding and evaluating sources, and thus move away from a reliance on the limited range of materials directly provided by their tutors. To encourage this transition there may be value in tutors facilitating and validating the sharing of online resources discovered by students. This could enhance the development of research skills and help to sustain a healthy flow of material. Discussion of the relative values of online resources discovered by tutors or students could become a useful part of the learning process.

R3: Provide opportunities for students to share, discuss and critique the online resources that they have discovered themselves.

Students are often unsure about their ability to select and evaluate critically the abundance of materials available online. They recognise how easy it is to become 'lost' in the web and to risk wasting significant amounts of time engaging with resources that prove later to be irrelevant or unreliable. It was clear from our research that students place a high value on resources that have been given a 'seal of approval' by their lecturers and tutors. This can be as simple as a list of links in the VLE.

> **R4: Continue to evaluate and collate online resources in order to scaffold students' access to online resources.**

There is still a sense among students that non-textual online sources have less academic legitimacy than books or journals. As they progress towards mastery of their subject, therefore, they need help in developing the skills to evaluate a broader range of sources, and encouragement to use them where appropriate, particularly in their independent study.

These skills fall under the broad heading of information literacy, itself an aspect of digital literacy, and the evidence from the students with whom we spoke suggests that 'study skills' sessions are proving effective in developing their academic practice.

> **R5: In study skills tuition, pay attention to sources other than 'conventional' text. Continue to improve digital literacy, especially in relation to non-textual sources.**

Students' reluctance to cite non-traditional sources in their coursework stems not only from concerns about the credibility of sources such as Wikipedia, but also from uncertainty about how to reference multimedia resources such as images, animations, videos and podcasts. Although common citation styles such as APA, Chicago and Harvard do cover these new media, such as online videos and podcasts, it is possible that students are not taught the relevant bibliographic formats.

> **R6: When teaching students referencing and citation skills, include non-traditional sources such as podcasts and videos.**

*Recommendations 7 onwards are intended for those with responsible for implementing institutional-level strategies and frame possible future approaches to OER funding and research. Nevertheless, they may also be of interest to teaching staff.*

## Improving services to students and staff

It is unclear whether students generally would find high levels of reuse in their curriculum problematic, but our data suggest that institutions as well as individual lecturers need to be alert to the possible consequences of charging substantial fees for courses that may be authored, in part, or by other organisations. The issue might only arise where 'big' OER are deployed to cover a particular segment of the course. This is also part of a broader set of questions generated by the marketisation of higher education, which lie outside the remit of this study.

R7: When setting out students' expectations and entitlements in relation to their learning experience, provide appropriate justification and assurances regarding the incorporation of resources originating from other institutions.

Evidence from this study suggests that staff development activities provide an effective avenue both to promote the value of sharing and reuse, and to instil in staff an understanding of IPR associated with the appropriation of online resources. Ideally, teaching and learning strategies should explicitly incorporate the reuse of online resources and make clear how services will support practitioners in finding and evaluating such resources, and in negotiating the complexities of copyright. More specifically, OER should be promoted in view of the (largely) more straightforward copyright conditions attached to their use. However, all such initiatives are more likely to bear fruit where they are directed towards helping lecturers to discern the benefits of reuse to themselves and their students (i.e. to see 'what's in it for them'), not coercing lecturers into adopting them in order to address a broader agenda such as efficiency savings.

R8: Capitalise on existing professional development activities in order to foster a voluntary culture of sharing and reuse.

As we have already noted (R1), although deploying 'big' OER has the potential for time and efficiency savings, the same may not necessarily be true where individual lecturers are making use of more fine-grained resources (e.g. individual images and podcasts). In this respect, the assumptions and expectations regarding reuse held at the strategic (institutional) level may be at variance with those held by teaching staff.

R9: Consider the reuse of online resources strategically, assessing their potential to save time or offer other efficiencies over a longer term rather than a shorter term and take account of the fact that teachers may perceive the benefits differently.

# Funding bodies

While an enormous number of 'general-purpose' resources on the web can be used for teaching and learning, many are of variable quality and/or not appropriately licensed. Since volume is one of the main barriers to discovering suitable OER, continued funding of OER production is needed in order to generate a critical mass of usable, trustworthy resources across the full range of disciplines (including interdisciplinary resources). However, more evidence is needed about the types of resources and subject domains within which new OER are most needed

R10: Continue to support the production of OER in the context of reuse and consider targeting that support towards the development of interdisciplinary resources and resources in under-represented disciplines.

It is clear that sharing among lecturers at the chalk face will continue to grow, and so it is all the more important that licensing and 'big' OER are not regarded as the whole picture. Our study indicates that there is great value in teaching practice becoming more open in a number of other ways. For example, using online resources as a method of benchmarking one's own courses can enable a lecturer to develop their practice in relation to the broader sector or discipline, not just to local standards. In the light of this, we recommend that funders promote open practices in teaching and learning in addition to open content.

R11: Support and promote 'open' approaches in teaching and learning practice.

Volume aside, the principal impediment to the uptake of OER is discoverability. Funding work that makes OER produced by universities in particular easier to find will have a substantial positive impact on reuse. We therefore echo the recommendation from earlier OER projects that OER produced by universities should always be i) available to major search engines and ii) located in a domain that engenders trust: i.e. '.ac.uk'.

R12: Continue to support the development of technologies to improve the discoverability of OER produced by universities.

As searches conducted during our workshops revealed, a notable proportion of online resources appear to be intended for others to reuse but do not actually carry a licence. Moreover, OER gateways may direct users to materials that are not, in fact, open. It is clearly not practicable to check and licence such a vast number of resources retrospectively. However, where resources are to be deployed for purely educational purposes, an easing of copyright restrictions and the implementation of a 'fair use' policy would make it possible for teachers to reuse them legitimately, particularly in online distance courses.

The potential influence of funding bodies, institutions and pressure groups in this matter is difficult to assess, but there needs to be a closer alignment between widely held – often

cavalier – approaches to reusing material and the legal implications of reusing without regard for the author's IPR.

R13: Lobby for the easing of copyright restrictions where resources are to be used for educational purposes.

# Further research

This study has explored the reuse of OER and online resources with the UK higher education sector. However, we have found few examples of the reuse of 'big' OER; rather the majority of reuse among teaching practitioners comprises the collation or re-contextualisation of OER that address a single concept or skill. There are also suggestions that 'big' OER produced in the UK are more likely to be reused abroad than at home. To gain a better understating of the influence and potential impact of UK-produced OER, therefore, we recommend that a future study should adopt a global perspective, and develop a number of case studies of the reuse and repurposing of such OER in other countries.

R14: Further research into the reuse, in a global context, of full courses/modules of OER produced in the UK.

While our empirical work uncovered a number of possible strategies and techniques to foster lecturers' reuse of OER there is, as yet, scant evidence about the effectiveness of such approaches. This, of course, will take time to emerge, and so when evidence does become available we recommend an investigation to address this gap.

R15: Further research into the optimal ways to foster teachers' reuse of OER.