

## CHAPTER 4

# Open Educational Resources

*To understand the world at all, sometimes you could only focus on a tiny bit of it.*

—Donna Tartt

### Introduction

Having looked at open access publishing in the previous chapter, an area where the tensions around the directions of openness are evident, this chapter continues to flesh out the central proposal that openness has been successful but now faces a battle over its future direction. In this chapter we will examine an area that provides a useful contrast to open access, namely that of open educational resources (OERs). Whereas open access sees educators attempting to wrestle control back from third-party publishers and often places the two in conflict with each other, the OER movement has largely developed from within the higher education sector. There are commercial offerings in this space, many allied to the publishers we encountered in the previous chapter, but ownership of the OER movement resides within the education sector still. One area where the type of tension seen in the previous chapter

is encountered is in open access textbooks, which are addressed in a separate section below. Here OERs overlap with open access publishing. At the other end of the spectrum, there is sequencing of OERs to create a course, where there is overlap with the subject of the next chapter, MOOCs. This raises the issue of definition – what do we mean by an OER – and to answer that, we will first look at a brief history of the OER movement.

## Learning Objects

The OER movement grew out of earlier work around ‘learning objects’, and many of the benefits of OER were claimed for learning objects, so it is worth examining them first. As elearning moved into the mainstream (around the year 2000), educators and institutions found they were creating often expensive learning resources from scratch. In Chapter 2 some of the influences from other fields were examined, and one such lesson from the open source movement was the efficiency in reusing parts of software code. If you want a map, a spell-checker or a style sheet, then it makes sense to take an existing one and simply call to it from your program, rather than developing one from scratch. This same relentless logic suggested that, with the digitisation of content, useful resources could be shared between institutions. This led to interest in what were termed ‘learning objects’ (or to stress their recyclable value, ‘reusable learning objects’).

Stephen Downes (2001) set out the compelling economic argument for learning objects:

[T]here are thousands of colleges and universities, each of which teaches, for example, a course in introductory trigonometry. Each such trigonometry course in each of these institutions describes, for example, the sine wave

function. Moreover, because the properties of sine wave functions remains constant from institution to institution, we can assume that each institution's description of sine wave functions is more or less the same as other institutions'. What we have, then, are thousands of similar descriptions of sine wave functions...

Now for the premise: the world does not need thousands of similar descriptions of sine wave functions available online. Rather, what the world needs is one, or maybe a dozen at most, descriptions of sine wave functions available online. ...

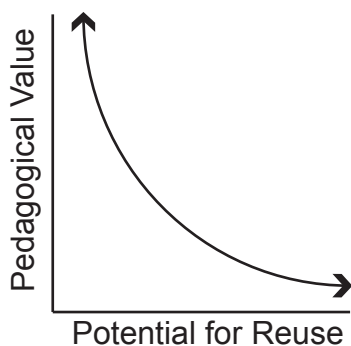
Suppose that just one description of the sine wave function is produced. A high-quality and fully interactive piece of learning material could be produced for, perhaps, \$1,000. If 1,000 institutions share this one item, the cost is \$1 per institution. But if each of a thousand institutions produces a similar item, then each institution must pay \$1,000, with a resulting total expenditure of \$1,000,000. For one lesson. In one course.

It sounds irresistible doesn't it? And yet, despite investment and research, the vision of a large pool of shareable learning objects never materialised. It is briefly worth considering why this was the case, as the reasons will be relevant for later manifestations of open education.

The first reason that learning objects failed to achieve their desired critical mass was what Wiley (2004) termed 'the reusability paradox'. Wiley contends that context is what makes learning meaningful for people, so the more context a learning object has, the more useful it is for a learner. If we take Downes's sine wave example, it is not just the sine wave function that is useful, but placing it in context, for example, making linkage with previous

content. Arguably, content with clear boundaries, such as a sine wave function, can be easily separated and then re-embedded in other courses, where these connections are made, but this becomes more difficult for subjects with less well-defined boundaries, for example taking a learning object about slavery from one context and embedding it elsewhere may lose much of the context required for it to be meaningful. While learners want context, in order for them to be reusable, learning objects should have as little context as possible, as this reduces the opportunities for their reuse. This leads to Wiley's paradox, which he summarises as, 'It turns out that reusability and pedagogical effectiveness are completely orthogonal to each other. Therefore, pedagogical effectiveness and potential for reuse are completely at odds with one another.' This is shown in **Figure 3**.

A second issue with learning objects was over-specification. At the time of their development, interoperability was a major concern, so being able to take a learning object developed by one university, and use it in the learning management system (LMS) of another one was the goal. There were issues around discoverability also, as much



**Figure 3:** The Reusability Paradox.

Figure by Wiley 2004. Published under a CC-BY license.

of this predated the dominance of Google. This led to the development of a range of standards, all with the noble intention of making learning objects more discoverable and reusable. The problem with this approach was that the standards became so complex that they became a barrier to adoption for most academics.

A third significant factor was the sustainability of the approach. Although it made economic and pedagogic sense to develop high-quality learning objects, they required a critical mass in order to be useful for educators. And achieving this proved problematic. The barriers created by the standards were off-putting for many educators. More significantly, sharing teaching outputs by contributing to learning object repositories was not part of standard educational practice in the way that sharing research findings through articles was. Acquiring a wide range of objects that would meet the needs of educators became difficult to realise.

These three factors, reusability, standardisation and culture, would partly be addressed by developments both inside and outside education. Some, however, were largely forgotten and are now being 'rediscovered', particularly with regards to MOOCs, as we shall see in the next chapter. So while learning objects faltered, in some respects they can be viewed as the required first steps in the process of opening up educational content, and were simply too early. The problem of over-complex standards for instance was largely overcome with the web 2.0 developments of simple embedding and tagging. Contributing a set of teaching materials to a learning object repository and being required to make it compliant with a standard such as SCORM (Sharable Content Object Reference Model) and adding a set of metadata may make it very reusable, but the complexity outweighed the benefit. Compare this with saving a PowerPoint file to the Slideshare site and tagging it with a few keywords, which was an activity educators took to readily.

## OERs

In 2001 the OER movement began in earnest when MIT announced its OpenCourseWare initiative. MIT's goal was to make all the learning materials used by their 1800 courses available via the internet, where the resources could be used and repurposed as desired by others, without charge. The William and Flora Hewlett Foundation, who funded the MIT project, define OERs as:

teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge (Hewlett Foundation n.d.).

This is a broad definition that covers whole courses (MOOCs) as well as individual resources, textbooks and software. A key element to it is the stress on the license that permits free use and re-purposing. This again draws on the open source distinction between free as in beer and free as in speech. In order to satisfy the Hewlett definition it is not enough to simply be free (as many MOOCs are), it has to be reusable also. There are other definitions of OERs available (see Creative Commons 2013a for a comparison of these) but even if they do not explicitly mandate an open license, they all emphasise the right to reuse content.

The OpenCourseWare initiative also addressed some of the issues seen with learning objects, particularly that of sustainability, since it took existing teaching content and released it. Educators were not required to create specialist content, although making content available for release is not a frictionless process, since the material

often required reversioning, rights clearance or some form of adaptation. MIT estimates that it costs US\$3.5M annually to add to and run their OpenCourseWare site. But nevertheless the initiative didn't rely on individual educators engaging with complicated standards and adopting a new set of practices. Instead, OpenCourseWare built on standard practice by taking existing course materials and releasing these, rather than developing bespoke learning objects.

Following on from the MIT announcement, an OER movement began, with many other universities following suit. These projects were often funded by foundations such as the William and Flora Hewlett foundation, or national initiatives such as the Joint Information Systems Committee (JISC) in the UK.

An appropriate question to ask at this juncture is, why have so many universities sought to make material freely available? A JISC review of the various OER programmes in the UK identified five major motivations (McGill et al. 2013):

- building reputation of individuals or institutions or communities
- improving efficiency, cost and quality of production
- opening access to knowledge
- enhancing pedagogy and the students' learning experience
- building technological momentum

As the authors point out, these motivations are not exclusive and often overlap. Similarly, the Hewlett Foundation (2013) state five motivations for why they fund the OER field:

- radically reduce costs
- deliver greater learning efficiency
- promote continuous improvement of instruction and personalized learning

- encourage translation and localization of content
- offer equal access to knowledge for all

This multitude of motivations is a significant point with regards to the battle for openness. Universities are themselves complex institutions that fulfil a variety of roles, including education, research, centres of innovation (Etzkowitz et al. 2000), public engagement, agents of social change (Brennan, King and Lebeau 2004), curation and preservation of knowledge, and the presence of an independent, trusted voice. So it should not be a surprise that open education should similarly have myriad roles and purposes. This functional complexity will be revisited in the next chapter on MOOCs, as it creates tension for commercial entities, who often require a more succinct goal.

OERs are often gathered together in repositories, and the range of these is impressive. It is almost impossible to quantify OERs by time or projects, since it will vary depending on your definition. For example, should you include online collections from museums? YouTube videos? Slideshare presentations? iTunes U downloads? Even if the focus is solely on university based OER projects then the OpenCourseWare Consortium lists some 260 institutional members, all of whom have a commitment to open education and releasing OERs. MIT has now made over 2,000 courses freely available, and the Open University's OpenLearn site has released over 10,000 hours of learning resources. In terms of usage, 71% of undergraduate students in the US had used OERs, although only one in ten used them all the time (Dahlstrom, Walker and Dziuban 2013), around 50% of educators in the US are aware of OER and 40% use it to supplement teaching material (BCG 2012).

The impact of OER on learning is not always easy to quantify, since there is an element of supplemental use of OERs by formal



students. There is ample evidence for the *belief* that OERs improve learning, but this is not the same as actual improvement. If we look for improvement in student satisfaction or performance, there is sometimes a divide between the beliefs of educators and students. For example, 63% of educators agreed that using the OU's OpenLearn resources improves student satisfaction, an opinion shared by 85% of K-12 teachers engaged in 'flipped learning' (a teaching approach where learners engage with online resources at home and use class time for interactivity De Los Arcos 2014). However, just 47% of students indicated that using OpenLearn increased their satisfaction with the learning experience (Perryman, Law and Law 2013).

With regards to performance, 44% of educators agreed that using OpenLearn led to improved student grades, and 63% of K-12 teachers agreed that using free online resources in the flipped classroom contributes to higher test scores.

Stronger evidence can be found when comparison points exist, particularly in relation to the adoption of text-free open resources: the Math Department in Byron High School reported a jump from 29.9 % in 2006 to 73.8% in 2011 in Math mastery, and from an average composite score of 21.2 (on a scale of 36) in 2006 to 24.5 in 2011 in ACT scores (Fulton, 2012). Wiley et al. (2012), however, found that the adoption of open textbooks in substitution for traditional textbooks by twenty middle and high school science teachers (and 3,900 students) over two years did not correlate with a change in student scores (either an increase or fall).

This overview of OERs demonstrates that from the initial steps with learning objects, the open approach to education is beginning to establish itself. The availability and uptake of OERs is now entering the mainstream in education, although evidence of impact is still mixed. One format where OERs are gaining

particular traction is that of open access textbooks, which will be addressed in the next section.

## Open Textbooks

As the Hewlett definition of OERs sets out, they can include textbooks. The field of open textbooks has proven to be one of the most amenable to the open approach, and provides solid evidence of cost savings, and pedagogical benefits. Indeed, in much of North America, open textbooks have become almost synonymous with OERs. The premise of open textbooks is relatively simple – create electronic versions of standard textbooks that are freely available and can be modified by users. The physical versions of such books are available at a low cost to cover printing, for as little as US\$5 (Wiley 2011b). The motivations for doing so are particularly evident in the US, where the cost of textbooks accounts for 26% of a 4-year degree programme (GAO 2005). This creates a strong economic argument for their adoption.

There are a number of projects developing open textbooks, using various models of production. A good example is OpenStax, who have funding from several foundations. They target the subject areas with large national student populations, for example, ‘Introductory Statistics’, ‘Concepts of Biology’, ‘Introduction to Sociology’, etc. The books are co-authored and authors are paid a fee to work on the books, which are peer-reviewed. The electronic versions of these are free, and print versions available at cost. The books are released under a CC-BY license, and educators are encouraged to modify the textbooks to suit their own needs. In terms of adoption, the OpenStax textbooks have been downloaded over 120,000 times and 200 institutions have decided to formally adopt OpenStax materials, leading to an estimated US\$3 million savings for students

(Green 2013). Similarly, a report by the Open Course Library (Allen 2013) estimated that OCL had saved students US\$5.5 million since its inception, with students saving an average of US\$96 per course compared with using traditional textbooks – some 90% reduction over the previous cost, which would equate to US\$41.6 million at adoption across the state of Washington. The College of the Canyons has estimated its savings from open textbooks to be in the region of US\$400,000 (Daly *et al.* 2013) using a formula based on previous purchasing patterns. It should be noted that these savings are often against projected spending of students, and so claiming them can be contentious, as it assumes students would buy the books.

As well as the financial impact, there may well be an educational one, simply because the costs of textbooks prevent many students from purchasing them. Feldstein *et al.* (2013) reported that while just 47% of students purchased the paper textbooks, most due to finding them unaffordable, when they switched to open textbooks, 93% of students reported reading the free online textbook.

Perhaps one reason why open textbooks are proving to be a fruitful area for OER implementation is that they readily map onto existing practices. One of the problems that learning objects encountered was that in order for them to be successful they required too many alien or novel practices to be adopted – sharing teaching material, uploading it to repositories, tagging it with metadata, using other people's material in elearning courses, etc. Open textbooks simply require an educator (or institution, state or country) to recommend a different textbook. As long as the quality of this book is deemed to be as good, if not better than the standard text, the cost savings alone become an irresistible driver for their uptake. Choosing between two alternatives of equal educational value, the price becomes a factor, and free is difficult to beat. Other factors, such as open licenses and the

ability to modify the textbook, become of interest later. For example OpenStax report that of 1,245 resources, 419 have been modified. This suggests that modifying a textbook is still something of an alien practice for many educators, but one that is growing. This is likely to take time to alter, but the open textbooks example illustrates how starting from a well understood practice can lead to successful OER adoption, and from that initial exposure to openness, other practices will follow.

### Issues for OERs

One of the issues that is often raised for OER projects is that of sustainability. Many OER projects have received funding from bodies such as the William and Flora Hewlett Foundation. Producing OER and maintaining large projects with associated staff is not a zero cost activity, and so questions arise about maintaining such projects when the original funding ends.

In a report for OECD in 2007, David Wiley defined sustainability as ‘an open educational resource project’s ongoing ability to meet its goals’ (Wiley 2007b p. 5). Wiley proposed three models of sustainability, which he labelled according to the universities that had deployed them:

- the MIT model – OERs are created and released by a dedicated, centralised, paid project team.
- the USU (Utah State University) model – OERs are created by a hybrid of a centralised team and decentralised staff.
- the Rice model – This is a decentralised model based around a community of contributors.

Economic viability of OERs is significant, because the same questions are now being asked of MOOCs and other open approaches.

Many universities require seed funding, usually from a foundation such as Hewlett or a national body such as the JISC, to establish OER projects, but external project funding is not a long-term solution. At the Open University the OpenLearn project operates on a USU model, and has made OER release part of standard practice. Each new course is required to designate a set of materials to be released, which are then 'scrubbed', formatted and made context independent by a central team and released through the OpenLearn repository. The cost of this additional work is covered by the recruitment value of the open material, which covers its costs in terms of student registrations, i.e., those learners who come to OpenLearn and then go on to sign up for a formal course (Perryman, Law & Law, 2013).

OERs can be sustainable therefore, but there are some costs involved in initial start-up. An alternative model is provided by the open textbook field, who argue that current costs allocated to purchasing textbooks for colleges can be instead diverted to creating textbooks which are open and free to use.

As well as sustainability, some of the issues that beset learning objects have not been completely overcome by OERs. Reluctance by educators to adopt OERs is still an issue, which can arise from difficulty in finding OERs, the time taken to adapt them and their context (Wiley's reusability paradox) (McGill 2012).

There is still a supply problem, which arises from a cultural issue in teachers sharing material readily, despite growing awareness of OERs. For instance, a survey of teachers in the flipped learning network found that whilst 70% of respondents reported that open licensing is important when using free online resources in their teaching, only 43% of teachers publish the resources they create publicly online and only 5% under a CC license (De Los Arcos, 2014). However, there is greater awareness of sharing material,

and through sites such as iTunes U, Flickr and YouTube, the barriers, both technical and cultural, to sharing content have lowered considerably. We will return to this when we look at open scholarship in Chapter 7.

### A Success Story?

The argument of this book is that openness has been a successful approach, and while that is relatively easy to establish for open access publishing, it is less clear with OERs. From the perspective of establishing a movement that has continued to grow over more than a decade, then OERs are a reasonable success story, compared with learning objects, say, or many other educational technology movements. However, they have not completely transformed education or disrupted it to the extent that many hoped for (Kortemeyer 2013). It has taken them over ten years and considerable investment to get to this stage, but they are now entering the global mainstream in education, and the next decade is likely to determine if their usage moves from supplementary to primary position in many forms of education. This timeframe and scale of investment is significant because it gives some indication as to the effort required to make an impact in education. The efficiency and pedagogic benefits of OERs have been apparent since the days of learning objects, but there are considerable barriers to overcome in realising these, including cultural ones such as educator reluctance to reuse other's materials.

This indicates that the effort required to make even a modest impact in the education sector should not be underestimated. Such long-term stories with nuanced outcomes are difficult to relate to a general audience, and the media has a preference for a certain type of narrative, which we shall explore in Chapter 6.

This meant that while OERs were largely overlooked by the mass media, the overnight revolution of MOOCs offered a more palatable story. But given the investment required to transform education, it is debatable whether many companies with venture capitalist backing will be able to wait ten years for their impact to be realised. In his critical analysis of Tim O'Reilly, Morozov (2013) makes a point about the different time scales of the free and open source movements we saw in Chapter 2, which have relevance here:

Stallman the social reformer could wait for decades until his ethical argument for free software prevailed in the public debate. O'Reilly the savvy businessman had a much shorter timeline: a quick embrace of open source software by the business community guaranteed steady demand for O'Reilly books and events, especially at a time when some analysts were beginning to worry

If one replaces 'free software' with OERs and 'open source software' with MOOCs in Morozov's analysis then a similar pattern is apparent. OERs, largely conceived of as a social good allied to the roles of the university, can afford to take their time to realise their goal, and indeed understand that such change *does* take time. MOOCs, particularly those with venture capital funding, are under pressure to realise more rapid and more dramatic impact. In Chapter 1 one of the reasons for positing the issues in open education as a battle was that of narrative. This need for rapid results to realise commercial targets creates a context where narratives of revolution and disruption are not only desirable, but essential. This is a topic that will be explored in more detail in Chapter 6, but for now it is worth noting the timescale, investment and hard work required by the OER community to realise their long-term goals.

## The Battle for OER

If we return to the theme of the book, that openness now faces a battle as to its future direction, then what might be the focus of that battle for OER? One such area might be competition from commercial interests in the OER space. OER has largely been a movement driven from within education, but there are commercial aspects too. The motivation for many universities is not purely altruistic; brand awareness, marketing and student recruitment are also part of the justification for an OER policy. In addition to OERs that are generated by educational institutions, a number of companies use them either as supplementary material to their core product or as their primary offering, and in other cases there is a blurred boundary between commercial and open interests. For example, the Virtual School creates OERs for teachers (in collaboration with the teachers themselves), and releases them under a CC license. It is created and funded by the corporate elearning company Fusion Universal and set up as a social enterprise. The Khan Academy is a not-for-profit organisation that creates and openly shares educational resources in the form of instructional videos. The founder, Salman Khan, was reckoned to be ‘the most influential person in educational technology’ by *Forbes* (High 2014). The Khan Academy has a reported 6 million visitors a month (Khan Academy 2013), and their approach was very influential on many of the MOOC founders, such as Sebastian Thrun (High 2013), so maybe this claim isn’t too exaggerated, at least in terms of media coverage.

A different take on OERs is provided by OpenEd, which is a catalogue of resources, including games and assessment for K–12, many aligned to the US Common Core standard. These are from other creators, such as the Khan Academy, but the



service gathers the resources around standards and also offers a Learning Management System and an API for other systems to integrate with the resources. The educational publisher Pearson has launched OpenClass, an online learning platform that is free to use and allows educators to create their own courses by using OERs (either their own or from elsewhere). In this model the provision of OERs is a route through which a learning platform can be marketed.

The OpenClass initiative is interesting because its announcement was met with a good deal of scepticism. Pearson isn't well known for giving content away or being part of the open movement. So a number of commentators wondered what was in it for Pearson to offer a free LMS (learning management system). Kim (2011) suggested they should be 'brutally honest about the threats to a publisher of the shift from paper textbooks to digital content and the need for publishers to not lose control of the sales channel'. While Watters (2011) cautioned that we 'need to question its usage of adjectives like "free" and "open"'. These responses indicate the wariness around commercial providers adopting open approaches, as the suspicion is that this form of open is being used to tie users into their paid for services at a later date or to try and establish a monopoly (although Pearson have stressed that they do not intend to up-sell further content to the OpenClass users).

However, commercial providers offering OERs is not necessarily to the detriment of the OER movement; in many respects it is a welcome and necessary addition to the larger pool of resources. It is only an issue if, as with the case of the green movement, it begins to undermine the core value of openness.

The issues facing OERs are perhaps best encapsulated by a report released in 2014. The National Association of College Stores examined the use of open textbooks created by the Open Course

Library (OCL) project in Washington State (Biemiller 2014). Their findings were discouraging for OER advocates, reporting that ‘Of the 98,130 students enrolled in these 42 courses on the 25 campuses, only 2,386 were in sections that used the recommended OCL materials.’ The report was somewhat strange, for a number of reasons. Firstly, the research was conducted by college stores, and many users of open, online textbooks would not go via the college stores to acquire these. One might also wonder if college stores are entirely in favour of free, online resources. But even if we ignore methodological concerns and accept the uptake is low, this is revealing about the context within which OERs operate. One might suppose that given the choice between a textbook that costs, say, US\$100 and one that is free (or the physical copy is available for US\$25), then the latter would prove to be more popular. The reasons the take-up may be lower than expected indicate the areas for the next phase of the OER movement. First amongst these is simply awareness of the resources. Commercial publishers have sophisticated and expensive marketing tools and expertise, and competing with this to simply make lecturers and students aware of the open alternative will be problematic for non-profit organisations. The second issue is less a financial one, and more cultural. Books are recommended by lecturers, many of whom have used the same book for several years and constructed a curriculum around it. To change to an alternative, no matter how good it might be, requires additional effort. While lecturers may care about the cost to students, the cost of textbooks is not borne by them, so there is no direct incentive to switch to free alternatives. This is not to say they don’t care, but rather that it is not always a priority for often over-worked faculty. In addition, many universities make a percentage of sales from the campus bookstores, so again there is no strong incentive to reduce costs.

What the OCL report reveals then is that simply creating OERs that are of good quality and freely available may not be sufficient to ensure adoption. There is a long-standing cultural ecosystem surrounding the current use of textbooks, and the new open versions need to address all the different elements of this to bring success.

## Conclusions

In the different categories of open education, OERs can be seen as occupying a middle ground, intersecting with open access, through open textbooks, and MOOCs, which can be seen as a subset of OERs. The OER field is constituted of a mixture of universities, national agencies, not-for-profit organisations and commercial interests. While there are some reservations about the intentions of the commercial players, the combination of OER providers represents a healthy mixture of different interests. The principles of OER are well established; they benefit from a fairly clear definition which foregrounds the importance of reuse and open licenses. Therefore, any entrants and participants in the field are obliged to behave in an open manner to a large extent. This may be a result of the altruistic roots of the movement and the time it had to establish itself, with educational providers and not-for-profits being the main drivers. As a consequence, educational establishments have stayed largely prominent in the field.

In terms of impact, OERs have realised success in terms of the number of resources and people accessing those, although some have criticised them for not having a greater impact on everyday practice; for example, Kortemeyer (2013) bemoans that ‘OERs have not noticeably disrupted the traditional business model of higher education or affected daily teaching approaches at most

institutions.’ However, the impact can be seen in a number of different aspects. The OER Research Hub (2013) set out eleven hypotheses which represented many of the key beliefs propounded regarding OERs:

1. Use of OER leads to improvement in student performance and satisfaction.
2. The open aspect of OER creates different usage and adoption patterns than other online resources.
3. Open education models lead to more equitable access to education, serving a broader base of learners than traditional education.
4. Use of OER is an effective method for improving retention for at-risk students.
5. Use of OER leads to critical reflection by educators, with evidence of improvement in their practice.
6. OER adoption at an institutional level leads to financial benefits for students and/or institutions.
7. Informal learners use a variety of indicators when selecting OER.
8. Informal learners adopt a variety of techniques to compensate for the lack of formal support, which can be supported in open courses.
9. Open education acts as a bridge to formal education, and is complementary, not competitive, with it.
10. Participation in OER pilots and programs leads to policy change at the institutional level.
11. Informal means of assessment are motivators to learning with OER.

These beliefs would often be stated as obvious, undeniably true or based on anecdote, but rarely backed up by evidence. The OER

movement has gained sufficient momentum to investigate these more fully now, and the evidence for OER impact can be found at the Impact Map (OER Research Hub 2014). In general, evidence was found to support the hypotheses, although it was still equivocal and nuanced for some. This pattern of initial belief-driven promotion followed by objective evaluation is a necessary one to pursue in new fields. As we saw in Chapter 2, the combination of digital resources and the internet has created new possibilities which don't have a precedent to draw upon. Therefore, for new fields such as OERs to reach a mature state when critical evaluation is possible, an initial phase characterised by experimentation and often evangelism is required.

OERs can be put forward as a success story for open education – they have had a positive impact for learners, they have developed sustainable models of operation, there is a thriving global community, the open aspect has been retained and there is a resonance with the social function of education, all wrapped up in a modern, 21st century, digital approach. If we revisit the principles of openness listed in Chapter 2, then we can see that OERs fare well against them:

- Freedom to reuse – open licences are part of the OER definition
- Open access – a defining characteristic
- Free cost – usually, although some commercial providers operate a 'freemium' model, whereby some content is free and some is paid for
- Easy use – generally they are, although modifying OER content can require specialist skills
- Digital, networked content – yes, although note previous point about awareness of OERs

- Social, community based approaches – a good OER community exists, and for many specific projects the open approach has been key to building communities
- Ethical arguments for openness – these have formed the basis for most OER projects
- Openness as efficient model – increasingly seen with the open textbook approach

Given this, it is worth asking then why this success story is not as widely reported in the popular press as that of MOOCs? Why would one educational technology blogger proclaim that MOOCs had led to ‘more action in 1 year than [the] last 1,000 years’? (Clark 2013). The Hewlett Foundation (2013, pg. 16) felt moved to point out that ‘we are seeing a lot of confusion in the market about the terms “Open” and “OER”. One example is the rise of massive online open courses (MOOCs), which have spurred a great deal of attention for the movement.’ Just what *is* it about MOOCs that has caused so much attention in the popular media, while OERs have been largely ignored? Answering this question will reveal much about open education and the tensions within and is the subject of the next chapter.