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Striving Toward Openness: But What Do We Really Mean?



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Abstract

The global open education movement is striving toward openness as a feature of academic policy and practice, but evidence shows that these ambitions are far from mainstream, and levels of awareness in institutions is often disappointingly low. Those advocating for open education are seeking to widen engagement, but how targeted and persuasive are their messages? The aim of this research is to explore the voices often unheard, those of the teachers and professional service staff with whom we are engaging. This research presents a series of interviews with those involved in open education at De Montfort University in the UK, with the aim of gaining a better perspective of what openness means to them. The interviews were analysed through an interpretive lens allowing each individual to create their own story and reflect their own personal view of openness. The results of this study are that in this university, openness is represented by five elements – staff pedagogy and practice, benefits to learners, accessibility and access to content, institutional structures, and values and culture.

This work shows the importance of adopting critical approaches to gain a deeper understanding of the philosophical and pedagogic stances within institutions. By giving a voice to all those involved we will be able to develop appropriate and more persuasive arguments to widen our sphere of influence as a community of open educators.

Keywords: open educational resources, OER, openness, staff perceptions, institutional culture

Introduction

Openness has long been associated with education and has manifested through the ages in many guises. A number of pivotal initiatives have further sealed this association and become inherent within our definitions and understanding of what it means to be open. The advent of the Open University in the UK in the 1960's represented institutional commitment to widening access through adopting innovative and technology-based teaching methods (Lane, 2009). The use of open licenses have lessened copyright restrictions on academic knowledge and widened the availability of education

materials beyond the campus (Creative Commons, 2016). Open educational resources (OER) and open educational practice (OEP) are widely documented as means of opening up access to education at a more intimate level (Wiley, 2006; Beetham, Falconer, McGill, & Littlejohn, 2012). Openness permeates research practice (Anderson, 2007; Peters & Roberts, 2015; Atenas, Havemann, & Hammonds, 2015) and scholarship (Veletsianos & Kimmons, 2012). The armoury of the open educator is varied and contributes to a global movement striving to remove barriers to learning and the opportunities afforded by education.

In establishing these definitions, might we be losing a deeper sense of what it means to be open? In the literature, it features as a desirable trait or cultural value inherent within individuals and institutions. Openness as a cognitive trait is considered important in relation to divergent thinking and creativity (McCrae, 1987). Schools strive to foster a culture of openness in classrooms when debating social and political issues to encourage independent thought (Alivernini & Manganelli, 2011). In one study of psychology students, openness and "openness to experience" was identified as a personality trait linked to higher levels of engagement with learning (Bakker, Vergel, & Kuntze, 2015). At institution level, it is being expressed as a strategic value representing the important position of higher education in society (Wiley & Hilton, 2009).

As Lane (2009) suggests, the plurality of meanings of openness leads to unclear directions particularly in relation to teaching practice. Weller (2014) argues that today the human aspect is being partly lost in our use of the word, with openness as a value or state being more often associated with content and processes, and we are losing our understanding of open as a mind set and virtuous trait (Peters & Roberts, 2015). Part of the challenge is being able to understand and interpret openness in a coherent way. Farrow (2016) applies a philosophical approach and defines openness not as a binary quality or value attributed to one activity or feature, such as cost or licensing terms, but as a "constellation of elements."

So in applying the constellation model, how do we delineate the essential characteristics of open that may have been lost in our more entrenched definitions? To explore openness in a wider social and cultural context, we can draw on its historical origins, as the idea of opening access to education is not new. In the 16th century Padua, anatomical dissection theatres were built to accommodate teaching sessions that were popular public events; learning was accompanied by musical performances until the precedent for private lessons was favoured (Klestinec, 2004). The first references to the term open education in the literature were made in the late 1960's with the inception of the Open University in the UK and access to courses that were free from entry requirements (Lane, 2009). At that same time, open education related to innovative teaching practices in UK primary schools (Barth, 1969) where more humanistic approaches were providing a pupil-centric schooling, with self-directed learning, and time for reflection and play (Katz, 1972). "Open educators are more concerned about the kinds of experiences students should have in school than about the cognitive, conative, and affective outcomes students should be expected to display as a result of having attended school" (Traub, Weiss, Fisher, & Musella, 1972, p. 71).

There are parallels between the early definitions of open education and Freire's (1998) later thinking, with schooling in the 1970's very much about encouraging thinking and problem solving in children rather than the transmission of content. Freire states: "to teach is not to *transfer knowledge* but to create the possibilities for the production or construction of knowledge" (Freire, 1998, p. 30). The idea that technology would play a role in the newly founded open education was also described, with the

growth of "learner-controlled education systems" extending the learner-focused model, and building on individual motivations to "put the learning process as much as possible into the hands of the learner" (Resnick, 1972, p. 2).

But what of openness as a human characteristic? The primary school approach looked to foster pupils' openness to new situations (Traub et al., 1972). Traub et al. (1972) gave an early indication as to one of the challenges facing open education if it were to be mainstreamed, that is, there wasn't a basis for assessing student outcomes in relation to openness of programmes (Traub et al., 1972), and by the mid 1970's, open education lost political ground in the UK and US which had followed suite in adopting these approaches.

One can argue that the aspirations for openness in education in the 1970's are paralleled today with intentions to provide more humanistic and learner-centred approaches to widen access and inclusivity. It would be another 30 years before technological advances and global political support would drive forward the idea of an open educational ecosystem that could connect the learner to the education system in different ways (Peters, 2010). OpenCourseWare and OER have led to the distribution of educational materials beyond the classroom, and provided a means for formal and informal learners to become co-creators in a more transparent and communicative education system (Dalsgaard & Thestrup, 2015).

As all of this activity has unfolded, the voices more often unheard are those of the teacher and learner. We know very little about how openness is perceived by those individuals the closest associated with it. Surely it is vital to understand this as we strive for openness?

In examinations of the levels of awareness of OER in a UK university, members of staff surveyed were relatively unaware of the term, but were altruistic in outlook seeing the benefits of sharing with their teams, although were less willing to share outside of the institution (Rolfe, 2012). Similar low levels of awareness were reported in the UK in a second survey conducted at that time, and with the same positive attitudes to sharing locally (Reed, 2012). In a later study in the US, about half of teaching staff who were in an institution that had engaged in OER initiatives were aware of the activity, and those surveyed gave broad interpretations of what their perceived meaning; this included associating open with resources that were free from cost, or practices that were similar to open source computing (Spilovoy & Seamen, 2015).

Even less is known of learner attitudes to openness. In one study around the time of tuition fee rises in the UK, students valued a level of ownership over *their* resources rather than wanting to share materials widely (Hurt, 2012). Other learners were interpreting openness in terms of availability of Massive Online Open Courses (MOOC), and were placing a value on the access to content (Alraimi, Zo, & Ciganek, 2015).

As we aspire toward openness within the education community, we rarely examine it in depth. The aim of this paper is to draw on a series of interviews conducted within a UK University with staff that engaged in open education projects from 2009 – 2012. Using an interpretive lens to focus on the narrative and context in which related to open in their own individual stories (McCormack, 2000), this paper captures some of the many flavours of openness.

Research Methodology

Participants and Context

In March 2015, eight in-depth interviews were conducted in De Montfort University in the UK with volunteers who were willing to participate from a pool of individuals who had been directly involved in projects funded by the HEFCE Open Educational Resource (OER) Programme (2009 – 2012; Jisc, 2015). These projects shared OER on laboratory skills, sickle cell anaemia and blood disorders, and other life science subjects (Rolfe, 2016). Staff engaged in projects as OER creators, facilitated students as co-producers, and using OER in teaching sessions. The interviews were semi-structured and focused in drawing out stories relating to the lasting impact of these projects on students, the individual, and institution.

Interviews lasted up to one hour. There was flexibility within the interview to explore new lines of enquiry as they emerged. Interviews were recorded and transcribed verbatim by the author so as to be immersed in the subjects discussed.

Data Analysis

The study aimed to reconstruct definitions openness by interpreting the interview transcripts through a lens. McCormack (2000) describes approaches in which multiple lenses can give perspectives on for example narrative, language, and context of a chosen subject. The interview transcripts were labelled according to the individual and were examined to identify salient passages of text where the word open or openness was mentioned directly (e.g., "open education") or in a more abstract form (e.g., "the spirit of open"). Where open was mentioned, any further elaboration toward an additional concept, or consequence or impact of being open, was also recorded. The analysis was done using NVivo software with responses with similar meanings were clustered and grouped into themes (http://www.qsrinternational.com).

Ethical Approval

This work was approved by the Faculty of Health and Applied Sciences Research Ethics Committee at the author's institution. Participants provided their written consent at the time of interview.

Results

Those interviewed included six members of academic teaching staff and two learning technologists. Staff were at different stages of career including one Professor and one Education Centre lead, and more junior colleagues. Their academic disciplines included biomedical science, forensic science, and social science.

There were five facets of openness that emerged from the interviews. In their personal stories the interviewees used the words "open," "OER," or "openness" in relation to their teaching practice, impact on the learner, as an artefact of content, in relation to institutional requirements, and culture and values (Table 1).

Table 1

Five Elements Relating to Openness

Elements	Description	
Personal	Open having a personal benefit in enhancing the practice of	
practice	teaching	
	Part of a community of practice	
Learner	Open serving to address accessibility issues	
benefits	Open providing access to education	
	Supporting the digital learner and developing open literacies	
	Open to promote science at open-days	
Content	OER creation by teaching staff	
	OER creation by students	
	OER reuse / dismantling	
	OER sharingKnowledge of open licenses	
	Open licenses for more control over your resources	
Institution	Institutional OER agenda and policy	
	Tension with institutional priorities	
Value and	Openness as a personal value	
culture	Openness as a trait within the community "the spirit of open"	
	Culture of open within the university	

Personal Practice

The interviewees spoke of their involvement in open education as being instrumental in enhancing their teaching practice. Those interviewed were widely using and creating OER predominantly in science laboratory classes for biomedical science and forensic science. They acknowledged that OER saved them time and allowed more time for discussion with students on the finer points of subjects. OER facilitated innovative pedagogies, such as circus-style, practical sessions, where students rotate around problem solving stations and can access OER via QR codes to self-direct their learning. OER were used as supplementary teaching aids and allowed students to control the pace and direction of their learning outside of lectures. Staff interviewed claimed better awareness of copyright and open licensing, and felt they had become more open and innovative as a result of these projects. They felt their teaching was more creative and effective. Interviewees commented that, "(i)t saves time you now? Instead of reading books you just see it in a few minutes and all the pictures and videos tell you much more than bits of text" and "(i)t makes the whole process of teaching more creative, with DMU with the emphasis on creativity, we should be doing this much more, and it is more creativity for the links and students."

Learner Benefits of Openness

Staff talked considerably about access to education, both in terms of making resources more visible on the web (access) and also providing variety of content that was more inclusive to learners (accessibility). They saw benefits from not having to rely on a closed university platform, and believed sharing content that is visible is the right thing to do. In all of the eight interviews, there was an unspoken acceptance that learning took place off-proprietary university platforms and was at its greatest beyond the campus infrastructure. Staff stated that "(p)ersonally I think the resources have a bit more of a democratic distribution that is quite useful," and

You could do it closed I'm sure, but the fact they are open and you can get them anywhere anytime that isn't platform specific, there is a huge benefit and they can use it however they want to use it.

Some commented that OER facilitated inclusive learning and had taken pains to think about making their resources accessible, albeit still with questions to ask, but showing that their practice had become quite advanced in considering the technical requirements of their teaching content in relation to accessibility. Specifically, it was reported that "(q)uite a proportion have and need learning support and for those students they have benefitted from having a prevue of what is doing in the laboratory session, and give them the confidence to turn up and do it" and

So if you are using images and putting alternative text on the images, seeing the tab order of the page, so there could be barriers there to finishing the thing off and put it up, and if you want to make it open and accessible, thinking about all those things as well, there is that side of it.

Some commented that engaging in open education was an important part of digital literacy development, and there was a perception that students today are digital learners and favour these types of resources. One staff member expressed that "I think that they are used and there is great potential to do more and use more and students like being digital learners and media learners and they would appreciate that greatly."

Open in Relation to Content

Those interviewed engaged in OER in a number of ways and described their creation of new materials, that they involved students in creating materials, the reusing and dismantling OER, and understanding open licensing terms. Students were involved in creating content as part of laboratory practicals, or had been employed as summer interns or on university work experience schemes. OER was most commonly produced in the form of video or audio. There was a strong sense that for those being interviewed, OER was part of day-to-day teaching practice and widely used in classrooms and for outreach events. One interviewee suggested "Even on the open days we use the link with visitors."

Staff were thinking about the license implications for their work, and believed that sharing OER created longevity for learning resources and enabled them to contribute to a wider community of practice. The Creative Commons license was viewed as a useful means of maintaining control over how their shared resources were used. Staff expressed that "By licensing you are protecting yourself and keeping control over it but you are still offering it out under various different terms of licensing so you have flexibility choosing what you do haven't you" and

I mean I think for me, it depends, practical difference I hope means there is longevity to them and other people can comment on them and other people can contribute if they wanted to or felt the need to, and there is a bigger community out there.

Institutional Agenda

At the time of these interviews in 2015, OER from the earliest laboratory skills project had been shared via the web since 2009. The clear outcome of this work was that in the intervening years after project funding had ceased, open education still thrived locally within the subject teams. At the level of the institution, however, the relationship with OER was a frosty one. OER was niche. The impact of the OER was not fully realised for the institution.

I think its really sad in some respects that we had those 3 projects and the institution never, didn't make, wasn't in a position to understand how to make more of them and how to drive and open educational agenda at the institution with students.

There were numerous factors discussed as to why this was the case. The reasons were not solely around intent, and part of the problem was staff turnover, changing institutional priorities and the introduction of higher student tuition fee rates in 2012 that diverted interest. One commented it could be time to have the discussion again: "(m)ore discussion more policy, thoughts, policy documents to go on probably is discussed and how, and again, maybe institutionally it might not be the right thing."

There were clear tensions between the strategy of the institution and pedagogic direction preferred by staff:

We need a lecture capture solution, we need a multimedia solution, an eAssessment solution, a synchronous solution, and the idea of open is kind of secondary. Not as shiny. It's a set of kind of cultural approaches, it is a mind set, it is not a shiny thing.

Open Values and Culture

Interviewees, unprompted, often commented on the culture of OER and openness as something that should have occurred. Open activity had no visibility in other parts of the institution, although these academics were able to work freely in their departments in ways that suited them: "(t)here doesn't appear to be anything stopping people from doing things" and "(t)here is no culture of openness. I don't know what the library does?"

One interviewee would often refer to the "spirit of OER" almost as a form of unspoken agreement with collaborators, but this also drew negative connotations such as when the terms of the Creative Commons license were not always fully understood by those reusing academic content. This individual had experienced the work being re-purposed but not in compliance with the terms of the license, and with no attribution to them as the author.

If you looked at their document you wouldn't really say it is plagiarised at all from mine they have created a new document. But they haven't taken up the spirit of the OER but that might be a cultural thing.

For some, openness and the sharing of resources had become a fundamental value and part of their daily practice: "It has changed my practice in terms of whenever I'm doing anything I think how could this be an OER or how could it supplement what I'm doing."

Discussion

The global open education movement is shaping Higher Education teaching and research agendas, and the idea of sharing content under open licenses via interactive digital environments is widening access to education (Wiley, 2006). From the principles and philosophies of open education in schools in the 1970's (Katz, 1972) to the advent of the UK's first Open University built on the idea of making learning more accessible (Lane, 2009), openness has so much grown in stature that it has become a commodity attached to education for commercial gain, where the principles of being open are often

exaggerated and misleading: "Openwashing: n., having an appearance of open-source and open-licensing for marketing purposes, while continuing proprietary practices" (Watters, 2014, para. 3).

We may seek to reclaim openness as a mind set and virtue (Weller, 2014; Peters & Roberts, 2015), and to continue widening participation in open education (Spilovoy & Seaman, 2015), but to do so we need to understand how our education communities engage with it. A voice largely unheard is that of university staff, and a qualitative enquiry such as adopted in the present study fits with Farrow's (2016) idea that openness is formed from a constellation of elements, rather than fixed ideas of what it might be: "Many different interpretations of openness have been advanced, often favouring one or more elements at the expense of others" (Farrow, 2016, p. 11).

In this paper, the views of openness from eight teachers and professional service staff were examined. All participants were familiar with open educational resources. Openness was perceived in relation to five elements located around personal practice, learners, content, institutional agenda, and culture and value.

Those interviewed who were university lectures spoke of openness and how it had enhanced their teaching practice. For them, this related to the widening of pedagogic choice and providing flexibility in lectures and laboratory classes, and not being confined within the digital platforms offered by the institution. The "porosity" of our institutional boundaries is recognised, and our daily working habits play out on our personal devices, through social networks, and through the availability of learning resources outside of the university system (Oliver, 2015). This leads to questions regarding the technical and legal support needed to meet these changing agendas as we operate increasingly in spaces beyond our institutions.

Openness as an emerging pedagogy was seen as beneficial to students through widening access and being more inclusive to learners. Staff viewed open education activity as important for the development of digital literacies for their students, and it was a vehicle to work with students in new ways. Their activities aligned with some of the pedagogical ideals of Dalsgaard and Threstrup (2015), and staff were testing out more transparent learning processes and better communication with their students. It is interesting how little the pedagogical potential of open education features as a strategic driver, and it is observed that engagement and uptake of OER is sometimes disappointing and not as a mainstream practice (Spilovoy & Seaman, 2015). We are well versed in the barriers to engaging with open education, largely revolving around time and technical support (Spilovoy & Seaman 2015; Rolfe, 2012), but previous research tends not to focus on understanding what the benefits might be to individuals and institutions. As McGill (2013) suggests, it is important to be clear about the benefits and impact of open work, particularly when attempting to influence individuals who have other. In the present study, the support for learner diversity and ability to widen access were seen as benefits of OER, and this information will assist us in creating more meaningful messages to support advocacy work.

The central concept of open education is the ability to apply open licenses to reuse, remix, and redistribute content (Wiley, 2014). As examined in one US study, a third of those surveyed reported no awareness of the Creative Commons open license, and two thirds of staff in an institution that had engaged in open education activity claimed little understanding of it (Spilovoy & Seaman, 2015).

When staff participate in open education, they often cite copyright as a training requirement and area of confusion (Rolfe, 2012; Reed, 2012). This would suggest institutions needs to strategically target this, and as the present study highlights, there are many benefits enjoyed by staff once they have acquired a degree of understanding. Staff claimed that adopting open practice was beneficial in helping them understand copyright, and they demonstrated this through reusing and dismantling the content of others, and working with students as co-creators of new materials. The use of Creative Commons licenses was seen as a way to create longevity for learning materials, and by clearly stating the terms of the license, this provided a means of control over their shared work. Again, these ideas could be used in creating persuasive arguments to engage wider sections of the academic community, and we rarely hear of the impact of open licensing of content beyond the immediate release of OER.

In this study, it was clear that open education activity was localised, and that there was a perceived decline in institutional buy-in since the start of these projects back in 2009. This was not in itself a barrier to the activity, but those interviewed felt the impact of OER could be more fully realised in the institution. It is not clear whether buy-in can be interpreted as the need for a relevant policy or just support. Other research suggests an intellectual property policy itself is more hygienic rather than a motivating factor, and that it is the culture that influences academics' decisions (Cox & Trotter, 2016). One might argue that as "little OER" exists and thrives (Weller, 2010), often managed by individuals or localised teams, there is no need for additional support. At De Montfort University, senior management was greatly in support of the work at the outset of the projects; however, the reliance on small pockets of activity and champions created vulnerability as people moved and local objectives changed (Rolfe, 2015). To secure sustainable and successful outcomes for open educational practice, certainly top-down policy in support of bottom-up formation of staff communities and academic cultures is suggested to be more beneficial (MacKinnon, Pasfield-Neofitou, Manns, & Grant, 2016). Within the institutional culture there needs to be an element of openness toward risk taking and the creation of spaces for experimentation as observed in the success of the Coventry University open media classes in the UK (McGill & Gray, 2015).

What Openness Wasn't?

Open wasn't discussed in relation to the nature of student relationships and classroom discussions (Alivernini & Manganelli, 2011) and this may have reflected the less philosophical and political nature of the subjects featured. Openness as an integral trait of academic communities as explored by Anderson (2007) did not feature predominately aside from one individual who referred to some coworkers engaging in "the spirit of open." With regards to the learner, openness related to being able to access content and develop digital skills, rather than an outlook or open mind toward learning new things (Bakker et al., 2015), so not reflecting the humanistic approaches developing in primary schools in the 1970's (Katz, 1972). Open practice described in the present study did not reflect the broader scholarly activities observed by Veletsianos and Kimmons (2012), such as open access publishing of journal articles and data, or maintaining a blog and/or social media presence. The overall narrative around openness was less about the technology as those interviewed seemed to have become immersed in their own ecosystem and operations, and it was not at all about the ethics or politics concerning access to education, two elements listed in Farrow's (2016) paper.

This study reinforces the importance of connecting with our perspectives of openness, in that it provides an understanding of our progress and awareness of barriers. An understanding of our individual and collective perceptions and values are important mechanics of the open movement

(Wiley & Hilton, 2009), and for its sustainability (MacKinnon et al., 2016). We collectively need to establish a more critical approach toward our frame of reference around open and in our evaluation of it. Farrow recognises the importance of defining openness not as a binary quality or value attributed to cost or licensing terms, but as a "constellation" of elements that help us understand "complexity and the diversity" (Farrow, 2016, p. 11). These elements need to be examined beyond individuals and institutions, and across the communities, cultural, and geographical contexts of our operations.

Recommended Next Steps

The research outcomes and approach taken can be used to help create targeted and meaningful messages. Table 2 provides an example of how this can be developed. The messages can be further tested for effectiveness via qualitative approaches to determine whether the messages have influenced awareness and/or behaviour (or whatever the desired outcomes are). More compelling messages can be built using quotations from those interviewed.

Table 2

Linking the Five Elements to Messages That Could be Used in Communication

Elements	Description	Message
Personal	 Open having a personal benefit in enhancing the practice of teaching Part of a community of practice 	Open education is a means of enhancing your teaching practice, and allows you to participate in communities beyond your institution.
Learner	 Open serving to address accessibility issues Open providing access to education Supporting the digital learner and developing open literacies Open to promote science at open-days 	Open educational resources in their truest sense provide accessible materials for students; these practices widen access to education and support diversity. Engaging in co-creation of open educational resources will support digital literacy development for your learners.
Content	 OER creation by teaching staff OER creation by students OER reuse / dismantling OER sharing Knowledge of open licenses Open licenses for more control over your resources 	By creating content you will understand (technical) and legal aspects of applying open licenses; open licenses will help you keep control over your resources and specify how you'd like them to be used.
Institution	Institutional OER agenda and policyTension with institutional priorities	(Research suggests that policy alone is less motivating for staff, but culture and support is – below).
Value and culture	 Openness as a personal value Openness as a trait within the community "the spirit of open" Culture of open within the university 	Engaging in open education will catalyse change within your teams and institution; you will connect with global open communities united by "the spirit of open."

Study Limitations

The conclusions drawn from this work are limited in that they are the views and interpretation based on the experiences of staff at a single institution. The methodology applied looked at the interview responses through a lens to focus on a given topic and highlighted the narrative, language, and context in relation to openness. The analysis is the work of a single researcher, and whilst this has advantages in being able to become immersed in the interview and transcription process, a second author could have verified the development of the thematic elements and descriptors. The interviewer was a former colleague of those involved which might have biased the responses, but that said, a number of critical components and examples emerged.

Conclusions

The purpose of this research was to capture the voices of university staff involved in open education, providing insight into *their* stories and understanding of openness. The work of the worldwide open education community is ever more pertinent with the rising costs of education, the need for creative pedagogies to support diverse learners, and to support education sustainability. We need to "remain critical of the systems we are creating" (Veletsianos & Kimmons, 2012, p. 181), and this includes understanding different communities of practice and those most closely involved. This study provided insight into open activities localised within one institution, and although the narrative as it unfolded was not reflective of broader definitions of open scholarship, the policies, and ethical considerations, it defined five elements of openness that were meaningful to this setting. This included a connection to the humanistic approaches of the 1970's fostering independence and students as co-producers of knowledge.

These approaches are important, as they will allow us to design and deliver clearer definitions of openness and create more persuasive arguments and messages in our advocacy work. Moreover, as the global activity advances and diversifies, we will need to keep recalibrating our definition.

References

- Alivernini, F., & Manganelli, S. (2011). Is there a relationship between openness in classroom discussion and students' knowledge in civic and citizenship education? *Procedia-Social and Behavioral Sciences*, *15*, 3441-3445. doi: 10.1016/j.sbspro.2011.04.315
- Alraimi, K. M., Zo, H., & Ciganek, A. P. (2015). Understanding the MOOCs continuance: The role of openness and reputation. *Computers & Education*, 80, 28-38. doi: 10.1016/j.compedu.2014.08.006
- Anderson, M. S. (2007). Collective openness and other recommendations for the promotion of research integrity. *Science and Engineering Ethics*, *13*(4), 387-394. doi: 10.1007/s11948-007-9047-0

- Atenas, J., Havemann, L., & Hammonds, W. (2015, November). Open data as open educational resources: Case studies of emerging practice (Blog post). Retrieved from http://education.okfn.org/open-data-as-open-educational-resources-case-studies-of-emerging-practice/
- Bakker, A. B., Vergel, A. I. S., & Kuntze, J. (2015). Student engagement and performance: A weekly diary study on the role of openness. *Motivation and Emotion*, *39*(1), 49-62. doi: 10.1007/s11031-014-9422-5
- Barth, R. S. (1969). Open education—assumptions about learning. *Educational Philosophy and Theory*, 1(2), 29-39. doi: 10.1111/j.1469-5812.1969.tb00348.x
- Beetham, H., Falconer, I., McGill, L., & Littlejohn, A. (2012). Open practices: briefing paper. Jisc. Retrieved from https://oersynth.pbworks.com/w/page/51668352/OpenPracticesBriefing
- Cox, G., & Trotter, H. (2016). Institutional culture and OER policy: How structure, culture, and agency mediate OER policy potential in South African universities. *The International Review of Research in Open and Distributed Learning*, 17(5). doi: http://dx.doi.org/10.19173/irrodl.v17i5.2523
- Creative Commons. (2016). Education OER (Blog post). Retrieved from https://creativecommons.org/about/program-areas/education-oer/
- Dalsgaard, C., & Thestrup, K. (2015). Dimensions of openness: Beyond the course as an open format in online education. *The International Review of Research in Open and Distributed Learning*, 16(6). doi: http://dx.doi.org/10.19173/irrodl.v16i6.2146
- Farrow, R. (2016). Constellations of openness. In M. Deimann & M. Peters, (Eds.), *The philosophy and theory of open education*. New York: Peter Lang Publishing.
- Freire, P. (1998). Pedagogy of freedom: Ethics, democracy, and civic courage. Rowman & Littlefield.
- Hurt, L. (2012). Student perceptions of open educational resources. (Unpublished masters dissertation). De Montfort University. Retrieved from http://www.biologycourses.co.uk/biology-news/student-perceptions-of-oers
- Jisc. (2015). Open education project archive (Blog post). Retrieved from https://www.jisc.ac.uk/rd/projects/open-education
- Katz, L. G. (1972). Research on open education: Problems and issues. *Clearinghouse on Early Childhood Education*, University of Illinois. Retrieved from https://eric.ed.gov/?id=EDo68202
- Klestinec, C. (2004). A history of anatomy theaters in sixteenth-century Padua. *Journal of the History of Medicine and Allied Sciences*, *59*(3), 375-412. doi:10.1093/jhmas/jrho89
- Lane, A. (2009). The impact of openness on bridging educational digital divides. *The International Review of Research in Open and Distributed Learning*, 10(5). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/637/1396

- MacKinnon, T., Pasfield-Neofitou, S., Manns, H., & Grant, S. (2016). A meta-analysis of open educational communities of practice and sustainability in higher educational policy. *Alsic:*Apprentissage des Langues et Systèmes d'Information et de Communication, 19. Retrieved from http://alsic.revues.org/2908
- McCormack, C. (2000). From interview transcript to interpretive story: Part 1—Viewing the transcript through multiple lenses. *Field Methods*, *12*(4), 282-297. doi: 10.1177/1525822X0001200402
- McCrae, R.R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, *52*(6), 1258.
- McGill, L. (2013). Overcoming barriers and finding enablers (Blog post). Retrieved from https://openeducationalresources.pbworks.com/w/page/25168957/Overcoming%20barriers%20and%20finding%20enablers
- McGill, L., & Gray, T. (2015). Open media classes at Coventry University. *Jisc Final Evaluation Report 2015*. Retrieved from http://comc.loumcgill.co.uk
- Oliver, M. (2015). From openness to permeability: reframing open education in terms of positive liberty in the enactment of academic practices. *Learning, Media and Technology*, 40(3), 365-384. doi: 10.1080/17439884.2015.1029940
- Peters, M.A. (2010). Three forms of the knowledge economy: Learning, creativity and openness. *British Journal of Educational Studies*, *58*(1), 67-88. doi: 10.1080/00071000903516452
- Peters, M.A., & Roberts, P. (2015). Virtues of openness: Education, science, and scholarship in the digital age. Routledge, New York, USA.
- Reed, P. (2012). Awareness, attitudes and participation of teaching staff towards the open content movement in one university. *Research in Learning Technology*, 20. Retrieved from http://www.researchinlearningtechnology.net/index.php/rlt/article/view/18520
- Resnick, L.B. (1972). Open education: Some tasks for technology. *Educational Technology*, *12*(1), 70-76.
- Rolfe, V. (2012). Open educational resources: staff attitudes and awareness. *Research in Learning Technology*, 20. Retrieved from http://www.researchinlearningtechnology.net/index.php/rlt/article/view/14395
- Rolfe, V. (2015, November). *Open education: sustainability versus vulnerability*. In OpenEd2015: Annual Conference, Vancouver, Canada.
- Rolfe, V. (2016). Web Strategies for the Curation and Discovery of Open Educational Resources. *Open Praxis*, 8(4). Retrieved from https://openpraxis.org/index.php/OpenPraxis/article/view/305
- Spilovoy, T. M., & Seaman J. (2015). Opening public institutions: OER in North Dakota and the nation. *Babson Survey Research Group*. Retrieved from http://www.onlinelearningsurvey.com/reports/2015openingthepublicsnd.pdf

- Traub, R.E., Weiss, J., Fisher, C., & Musella, D. (1972). Closure on openness: Describing and quantifying open education. *Interchange*, *3*(2-3), 69-84. doi: 10.1007/BF02137636
- Veletsianos, G., & Kimmons, R. (2012). Assumptions and challenges of open scholarship. *The International Review of Research in Open and Distributed Learning*, 13(4), 166-189. Retrieved from doi: http://dx.doi.org/10.19173/irrodl.v13i4.1313
- Watters, A. (2014). From open to justice (Blog post). Retrieved from http://hackeducation.com/2014/11/16/from-open-to-justice
- Weller, M. (2010, November). *Big and little OER*. In OpenED2010: Seventh Annual Open Education Conference, Barcelona, Spain.
- Weller, M. (2014). *Battle for open: How openness won and why it doesn't feel like victory*. London: Ubiquity Press. doi: 10.5334/bam
- Wiley, D. (2006, February). Organisation for economic co-operation and development. Paper for Expert Meeting on Open Educational Resources, OECD-CERI, Malmö, Sweden. Retrieved from http://www.oecd.org/dataoecd/19/26/36224377.pdf
- Wiley, D., & Hilton J., III. (2009). Openness, dynamic specialization, and the disaggregated future of higher education. *The International Review of Research in Open and Distributed Learning*, 10(5). doi: http://dx.doi.org/10.19173/irrodl.v10i5.768.
- Wiley, D. (2014). The access compromise and the 5th R: Iterating toward openness (Blog post). Retrieved from http://opencontent.org/blog/archives/3221



