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The impact of developing Open Educational Resources (OERs) on novice OER developers

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Abstract: We focus on the experiences and attitudes of a small group of academics, new to the concept of OER, who developed open resources for the first time as part of a UK funded project, CPD4HE. This work was located within an on-going national OER programme, which has stimulated development of resources and research into related issues such as motivators and barriers, usage and impact.

Analysis of texts generated during the development process revealed that the novice OER developers engaged particularly with licensing and IPR issues, the nature of their audience and some technical challenges, as well as with the practicalities of project participation. The texts also illustrate collaborative and community-building aspects of OER development; teacher-developers supported one another with encouragement and feedback on resources, and participants established links with sector-wide networks in Open Education.

Post-project 'professional conversations' between four of the academics suggest that the OER experience has raised awareness of open practices and that educational values, academic identity, authorship and approaches to IPR were key elements in a description of their experiences and their attitudes towards open education. Findings provide tentative support for suggestions in the literature about the transformative potential of creating open educational resources.

Keywords: OER, Open Education, innovation, collaboration, academic practice, impact, academic values, academic identity, workplace writing, teaching

Introduction

Openness in education has caught the collective imagination of the HE sector and currently a certain enthusiasm to pursue openness is evident in a range of initiatives, among others: Open Access for research publications; the increased delivery and participation in MOOCs (Massive Open Online Courses); international projects such as the OER University (OERu); and UK sector-wide programmes to support the development of openly licensed materials and repositories.

As increased numbers of academics become involved in the broader Open Education movement, it would appear that the very act of participating in Open Education activities can transform attitudes and practices surrounding the sharing and dissemination of educational texts and materials. In this paper, we focus on the experiences and attitudes of a small group of academics, new to the concept of OER, who developed open resources for the first time as part of a UK project, CPD4HE, funded by the HEA/JISC. This work was located within an on-going national OER programme, which has stimulated both development of resources and research into related issues such as motivators and barriers, usage and impact.

Following an account of current research in the area of Open Education, we will describe the CPD4HE OER project and discuss the impact that writing and releasing OERs had upon novice developers. Drawing on interviews, commentaries and reflections, we explore these academics' thoughts about the ways in which working with OER involved issues of academic identity, educational values, authorship and a broader sense of awareness-raising. We also consider, tentatively, the extent to which a 'communities of practice' paradigm helps describe academics' initiation and continued involvement in the broader Open Education movement and, drawing on work by Lea and Stierer (2009), we also suggest that these OERs are examples of workplace writing that helps frame academic identities.

Development and Research Context

Open education in the UK HE sector has until relatively recently focused on developing individual resources (OERs) rather than complete courses, although the rapid growth of MOOCs and other open courses may be changing this picture. Online repositories associated with national organisations (e.g. JORUM), disciplinary networks (e.g. Humbox, LORO) and institutions (eg OpenLearn) have been populated with learning materials through successive waves of projects. Examples include: DELILA, FAVOR, OTTER, DHOER, Zandra Rhodes Digital Study Collection, Observing the 1980s and Histology and Histopathology: virtual microscopy on-line. Resources in repositories are becoming more accessible thanks to better search tools, use of consistent technical standards and clear (Creative Commons) licensing.

These projects have been supported, by funders such as the JISC (Joint Information Systems Committee) and the Higher Education Academy, through several developmental phases. Initially, the emphasis was on creating, sharing and archiving materials. Increasingly there is a focus on practices and on understanding how OERs are found and used (Masterman *et al.*, 2011; Meyer, 2011). Additionally, there is an interest in understanding how open education approaches and practices get embedded in university policy.

In managing OER programmes, funders have encouraged the development of communities of practice. The University of Bath's Disciplinary Thinking OER project, for example, called on a disciplinary interest group to trial and critique outputs. It may also be useful to consider a broader 'open education' community. The Communities of Practice paradigm (Lave and Wenger, 2001)

might provide a framework for understanding how the process of moving from traditional into more open educational practices gains purchase across a sector. For example, even modest projects enable participants to enter an OER community and this may have a ripple effect that stimulates the generation of enthusiasm within their institutions. (Jones, 2009 has noticed such an effect with university teaching enhancement schemes.)

Recent studies of OER in UK higher education have considered what motivates institutions and individuals to engage with open education practices, the barriers to such engagement, usage and impact, particularly the impact upon resource authors, which is the subject of this study. Impact on academic practice is complex because it involves research, scholarship and public engagement as well as teaching, and open education potentially intersects with all these activities. Lane and McAndrew (2010), writing about the UK Open University's OpenLearn initiative, suggest that the OER movement has had a greater impact than its precursor, Re-usable Learning Objects (RLOs), in part because OERs present fewer barriers to experimentation by teachers and afford a participatory, action research approach. Additionally, the availability of open materials for teachers and learners to use directly in their practice is foregrounded in the literature on OER in a way that distinguishes it from the RLO literature (Lane and McAndrew, 2010).

Teachers' engagement with open resources as both authors and users of materials is increasingly a site of exploration. Bates *et al.* (2007) and more recently Rolfe (2012) conducted surveys of university teacher attitudes and feelings about OER. Bates *et al.* (2007) focus on the release of materials, which is particularly relevant to this study. They seek to identify areas of concern to teachers related to the sharing of their teaching materials. Most of their respondents wished to place some restrictions on the rights of those who accessed their materials - although there was considerable variation in specifying these restrictions. Concerns related to intellectual property and copyright were expressed by the academics in our study and can be barriers to both release and re-use of resources.

The JISC OER Impact Study (Masterman *et al.,* 2011) is relevant to this research in terms of both findings and methodology. It considers the use of OER from the perspective of institutions, teachers and learners. The authors suggest that university teachers still tend to create the majority of their resources themselves. Whilst the large repositories and the concept of OER are not necessarily familiar to teachers, they commonly draw materials - particularly images or multimedia - from the Internet. Similarly, whilst formal release of materials as OER is still not widespread, much informal, local sharing takes place. Like Coughlan and Perryman (2011), Masterman *et al*. observe disciplinary differences related to using open resources. They also identify a relationship between a teacher's individual educational values and disposition to engage with open education practices, a correlation that also emerges in our research. Furthermore, some of their interview data hints at the transformative potential of engagement with open education, something which is borne out in the study discussed in this paper.

Project context

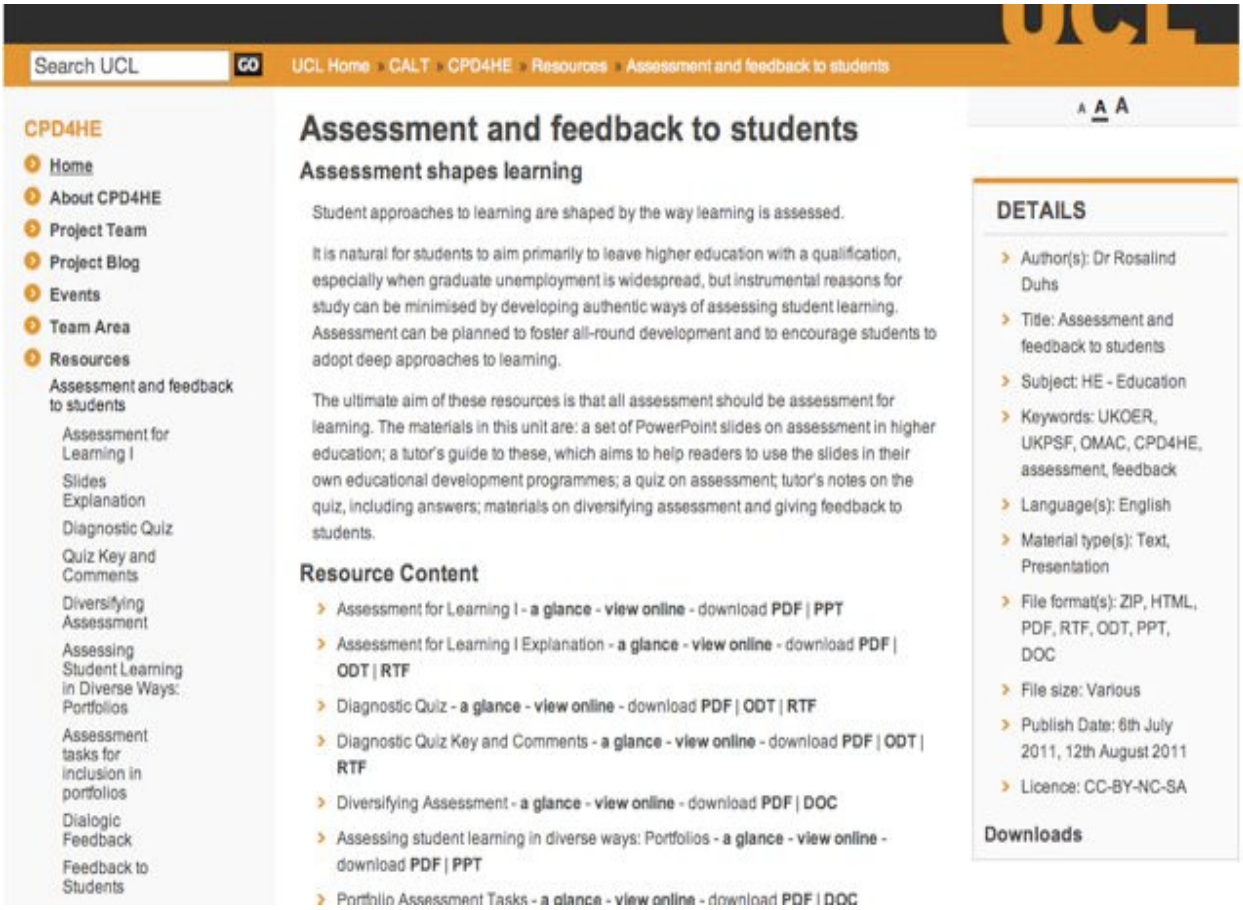
This research is focused on teacher developers who participated in CPD4HE, a project funded by the UKOER programme and based at UCL. It entailed a group of academics collaborating with technical and rights experts to create around 300 study hours of open educational resources. The resources were intended for use in professional development programmes that mapped onto the UK Professional Standards Framework (UKPSF) for teaching and supporting learning in higher education. Many of the materials originated in masters level courses in

education. In addition to the learning materials themselves, guidance for potential users was provided in the form of audio recordings and written texts in which the teacher-developers offered further contextual information for resource users. The resources and guidance material were released in JORUM and on the project website (Figure 1).

None of the academics involved had previously had any active involvement with OER. The institutional context was a research-intensive university with its own repository for research outputs but no equivalent for learning resources or scholarly publications about teaching and learning.

The working process devised for the project gave individual teachers responsibility for developing OERs on one or more of the topics that they taught. After consultation with the project's rights and licensing adviser, they made their own decisions about whether to include third party material and, if necessary, negotiated permission to use it. They also worked within guidelines on technical standards, with back-up from the project technical specialist.

Figure 1: Sample resource page - CPD4HE project



OER development involves collaborative working and offers networking opportunities (Lane *et al.*, 2009). It is important to observe that while the development work was largely an individual endeavour, there were, nonetheless, many opportunities to jointly explore issues surrounding open education. For example, beyond the writing of resources, project participants also took part in collective activities such as workshops, webinars, seminars, social networking, meetings and informal discussions. So while they were producing materials, they were also engaged in larger conversations, with other project team members, institutional colleagues and those across the HE sector more broadly. These interactions gave individuals a chance to engage in dialogue about issues such as IPR and licensing more broadly, and, as suggested above, could perhaps be regarded as the start of induction into a

community of practice. This also enabled them to enter into a broader OER community by joining lists and forums, attending workshops and interacting with others working in Open Education through online and face-to-face events.

Methods and approaches

In order to learn more about the teachers' experience of creating and working with OERs, we considered data from two sources. We were studying our own and our colleagues' practice and this informed the methods used.

1. Action-reflection cycles with members of the project team. As Henderson and Petersen (2008) observed, a funded project can create new opportunities for regular meeting and reflection. In this case, monthly team meetings and frequent, focused discussions provided a framework for developing the OERs. 9 team members were involved (6 teacher developers and 3 in a support or advisory role). The project's "critical friend", the leader of another OER project, DELILA, and members of the project steering group also participated in some discussions.

We included in the analysis only discussions and reflections that had been documented (83 items). The texts were emails between members of the team, contributions to the project blog, minutes of team meetings and less formal notes on conversations. They were analysed in order to categorise the topics that had engaged the group during the development phase. The emerging categories were then sub-divided to produce a description of what had engaged the team and to inform the creation of a set of questions for use in the interviews (activity 2).

2. Extended post-project interviews were conducted approximately 6 months after the end of the project. Four of the teacher-developers were involved, including the authors. Bearing in mind the authors' role as part of the group, the interviews were treated as "professional conversations" (Danielson, 2009). These might be described as purposeful dialogues between people who share a complex task or work situation; the aim of the conversation is to improve understanding and/or performance. Conversations may focus on narratives (e.g. Rust, 1999) or, as described by Henderson and Petersen (2008), enable participants "to unpack and articulate their beliefs and values" (in their case, about the teaching of literacies). All participants had shared the OER development experience and the aim was to probe and reflect on experiences with a view to increasing understanding. Our approach was similar to that of Schuck *et al.* (2008), whose analysis of such conversations throws light on the way in which a small group of HE teachers develop their practice together and support one another.

Reflective questions

We drew on our team's experiences as reflected in texts generated during the project, to prepare a set of questions as a focus for the conversations. Analysis of the texts showed that IPR and licensing, audience (related to authorship and to teaching), feedback on resources and some technical issues had particularly engaged team members. We also wished to consider impact and attitudes towards OER more generally. The questions that formed the basis of the interviews addressed issues of academic identity, professional values, teaching practice, writing for an unknown audience, intellectual property and attitudes towards sharing.

Questions drawn upon in the interviews:

1. In designing learning activities, have you become more aware of open resources that you can use?
2. Do you design your materials with a view to sharing them openly (e.g. paying attention to copyright of third party materials)?
3. Has there been any other impact on your working practices?
4. When developing your resource, how did you conceptualise audience? What is the impact of not knowing an audience?
5. Do you have any thoughts about the learners and their possible experiences with these materials?
6. What are your attitudes in terms of creative commons licensing of work you created? Did your attitudes towards licensing change during the process?
7. Did your sense of identity as academic authors/producers shift during the work?
8. Does this sort of work accord with your broader educational values? Has it shaped your values at all?
9. Is there anything else you would like to discuss about the creation of OERs and participation in an open education project?

Conversations lasted approximately half an hour, were recorded and transcribed; the transcripts were analysed in order to identify themes and trends.

Themes

In this section, we look at five themes that emerged from the data: OERs and teacher identity; OERs as texts/publications; values; IPR; and awareness-raising.

OERs and teaching identity: 'staking a claim'

There was a general perception amongst participants that, while there were established ways of documenting research, there were fewer opportunities to write about their teaching that enabled them to align themselves with a body of work. One of the most potent observations in this regard, was the extent to which the writing of OERs was likened to the staking of a 'claim' on the teaching landscape. This sense of making a claim through the release of OERs was understood and realised in different ways. One participant felt that writing OERs increased the visibility of her work as a teacher and helped her build a reputation for a particular area of work. She suggested that by releasing OERs she relocated her teaching practice from a private to a public domain, and she was, thus, making a hidden activity visible while at the same time capturing and sharing what she perceived to be the 'ephemeral' quality of teaching: '[with OERs], you've actually got something to show for all your ideas about the teaching'. (P1)

Similarly, P2 mentioned her pleasure and excitement in putting her work 'out there', and, as we discuss further below, felt that the release of OERs identified her as the author of that work and allowed her to make sure it remained in a public (as opposed to a private or commercial) domain.

For these participants, developing, licensing and releasing OERs represents a form of 'identity work' as defined by Lea and Stierer, 2009 in which university teachers construct a sense of self and find new ways of 'framing the relationship between academic practice and academic identities, as textual, communicative and situated' (Lea and Stierer: 417). Through writing and sharing open

resources and claiming authorship of their teaching texts and materials, these academics are situating their work, establishing a teaching identity and articulating aspects of a practice that are often hidden.

OERs as text/publications

The concept of authoring and writing is significant here, because for most of the participants, there was a sense of wanting to identify the resources as texts and themselves as authors (as opposed to 'designers', a term frequently used in the discourse associated with learning technologies and learning objects.). P1 strongly identified the materials as 'textual' and herself as an author: 'they are very much texts and texts need to be written'. Furthermore, she was keen to list the OERs as official publications, even if there was some uncertainty about their exact genre and status:

"I had to write my homepage for the web, so you have to put all your selected publications and your conference publications and I didn't know exactly where to put it [list of OERs], but I thought '*I'm putting on my OERs ... because I'm really proud of them.* . .So I think it was under 'projects you've been involved with'. I put them in there and I've got links to all three of them on my home page and I've also got it in my [email] signature line." (P1)

P2 spoke repeatedly about viewing herself as an 'academic author' when she wrote OERs. She said that she would 'definitely' list OERs on her CV and that she actually felt more 'proud' of her OERs than of her PhD. These teachers' sense of having authored a text is interesting in view of the fact that the Creative Commons licenses they opted to apply allowed users to change these texts.

Whereas it was clear that P1, P2 and P4 had seen the OERs as finished, polished texts, albeit ones that would almost certainly be developed in new ways by other teachers, P3 had less of a sense of the OERs as publications: 'I didn't feel too much pressure to get my materials to a complete and finished state. I felt I was putting out ideas….'. She states her pedagogical preference for creating small, idea-centred units:

"… as a teacher, I don't think I would be that likely to take up a complete programme that someone else had designed, I'd be much more likely to take a single idea or a single activity and adapt it for my own uses. So although you can download the whole package, most of the materials are split up into quite small units." (P3)

P3 would appear to be focusing more on the potential audience for her work than on the texts themselves and, in the above quote, she takes a more fine-grained approach to the construction of her resources, preferring to allow others to create a narrative framework for the items. She also tended not to speak about 'texts' in the way others did, and was more concerned with future processes by which the materials might be used. Our sample size is too small to indicate whether these varied approaches might be aligned to disciplinary background or some other factor, but this would be an area for future exploration.

OERs and values

All participants indicated that the Open Education movement espoused a broad set of values (sharing, community participation, benefit of a common good) that they embraced. Although the precise 'values' of Open Education were not specifically articulated, there was a feeling amongst participants that their personal and professional values were aligned with the ideals underpinning OER: 'It [Open Education] just seems a very natural extension of the fact that

through my whole teaching career if anybody had wanted to use my handbook or teaching materials or anything, they'd ask me and I'd always say 'yes'. ' (P1)

P2 went further and described how she used OERs, and in particular the licensing of materials, as a way of signaling her values. Like P1, she had always been happy to share materials, but now, in contrast to colleagues who might copyright work, she uses CC licenses to publicly demonstrate her values: 'I've started putting the CC logo on my slides. It [the project] has had an impact on me.' (P2)

For all of the teachers with whom we spoke, and for ourselves, Open Education was situated within a general set of values that we felt we shared, and participating in the design and release of OERs helped consolidate those views and allowed us to express more publicly our embrace of those values. This predisposition towards the perceived values represented by the Open Education movement (sharing, collaboration for instance) accords with the findings of Masterman *et al.* (2011) who suggest that such an alignment of values is a prerequisite for both the individual and institutional uptake of OER. This awareness of values in teaching is also in step with a developing discourse on values in HE teaching as articulated by Macfarlane (2004) and Harland and Pickering (2011). Significantly, however, there is relatively little mention of educational technology or online learning in the broader literature on values.

OER and IPR

Related to a consideration of values is the idea of IPR and acknowledgment. One issue that recurs in the burgeoning literature on OERs is the concern that authors of texts and materials are 'giving away' their work and relinquishing their rights over it. P2 and P1, however, felt strongly that, once into the CPD4HE project, any concerns about their intellectual ownership of their materials were placated. P2 spoke of how, for particular reasons, she had been growing increasingly protective of her teaching materials, and how working on the project had made her 'relax' about IPR. Likewise, P1 suggested that releasing her texts under a CC licence offered her 'protection' from potential IPR infringement, which she had brushed up against:

"It seems the best protection against the exploitation of your work without acknowledgement and without permission is to put it out there, publicly, but to ask for the attribution and not for the commercial exploitation."

Participants seemed to make a distinction between allowing use of their materials and allowing what some viewed as 'exploitation'. Whether to include the 'Non Commercial' (NC) Creative Commons attribute in licenses for the materials had been the subject of debate during the project. The funding body strongly discouraged the more restrictive license but the team was resistant to this pressure. This was partly because of the relative novelty of OER in the institution: "we are trying to encourage more 'sharing' and the concept of OER" and "the NC [is] a means to reassure colleagues" (P5, email).

Most of the teachers remained uncomfortable about commercial use of the resources but an email from P3, towards the end of the project, asks for help to remove the 'NC' from a license, suggesting a shift in attitude.

Both P1 and P2 felt that the value of the texts or materials lay in the context in which they were used; the teaching experience was far more than just 'materials'. Indeed, the re-use of an academic's materials does not diminish their individual or institutional 'currency' and it may well enhance it. As P1 argued

"The analogy with a restaurant is that River Cafe [London restaurant] have

published a cookbook with their recipes... it has not stopped them exploiting that intellectual property right if you like by cooking the meals and having people come to the restaurant; I'm sure it hasn't damaged that at all ... it's enhanced it. And that's how I see OERs: You're giving away the recipes, but people will still come to you."

Ultimately, for the project as a whole, licensing was still a complex issue. But it was clear that the participants in this study had addressed copyright and IPR both in terms of their own work and in relation to third party material, and that they felt releasing OERs reinforced their position as authors of teaching materials.

OERs as awareness-raising

Finally, all participants felt that their awareness of open resources, licensing and their understanding of the effort required in creating 'good' OERs had been enhanced. No members of the project team had had prior experience with OERs. Yet, since participating in the project, they have all actively sought OERs to incorporate into their teaching and professional practice. Additionally, all indicated that they regard it as a normal part of practice, now, to make texts and resources available, where possible, using Creative Commons licensing. P1 mentioned that she now includes the release of OERs as a standard 'output' on any grant applications. The authors are currently leading a follow-on project from CPD4HE, which involves OER policy and the development of an e-book to be released as an OER.

Limitations

The small number of participants involved in this study (9 in total, with the majority of data on which findings are based arising from conversations between four teacher-developers) is a limitation. Clearly this does not allow generalization of the findings but the results do make sense in the light of larger studies and they may suggest paths for future research. We were researching our own practice so a degree of subjectivity is unavoidable. However, by including in our first round of analysis only texts that had been generated as part of the project (and independently of this research), we attempted to make the research process as objective as possible.

Discussion

Participants talked about their academic practice as a whole, not just their teaching, and they believe that their experiences as OER developers have had an impact on their broader practice. They point to visible evidence of this (inclusion in grant applications; CC licenses for presentations). They also state that they are more aware of repositories and of open content, and they are motivated to search for suitable OERs when developing new courses or participating in collaborative projects. Additionally, those who have continued to release materials now do so with less restrictive licenses.

Authorship is traditionally associated with asserting the rights of the creator and at first sight open release seems to conflict with this. So much in academic life rests on acknowledging and crediting individual authorship so it is not surprising that IPR should be a concern for the academics who took part in this study. It seems from the conversations that a concern for protecting rights has been accommodated rather than challenged, and the Creative Commons licensing has enabled some of the teachers in this study to identify themselves as authors of materials that they would not normally have published. Releasing the work as OERs under CC licenses has become a way of issuing and sharing materials while also asserting their provenance.

Have the participants entered a new community of practice and is 'Communities of Practice' a useful lens through which to examine OER impact? It is probably too early to say as these were first steps into OER for all of the project team. However, the Open Education 'project' is characterized by community building, particularly through digital networks, with constituents across countries and sectors, and amongst the project team there was evidence of mutual support as well as an awareness of being engaged with a broader community through the release of OERs. The notion of being involved in a larger movement struck a chord with P3 who liked the 'sense of being part of a big movement, a worldwide movement.' P1 spoke repeatedly of operating within a 'public domain' when releasing and searching for resources. Subsequently, some of the participants in the CPD4HE project have engaged more fully through social media and online meetings with national and international Open Education networks and events, such as Open Education Week.

Conclusion

As suggested above, it would seem that the act of creating the OERs was transformative for these academics in several ways. Firstly, it helped them assert aspects of their identities as teachers by enabling them to 'stake a claim' through the authoring and sharing of teaching materials. The writing and releasing of an OER helped to make the private act of teaching more public, and capture an aspect of an activity often seen as ephemeral.

It also emerged that most of the project team viewed this work as comparable to the authoring of other academic texts and they intended to list their OERs in professional domains such as websites, email signatures and CVs. As suggested here and above, the creation of OERs was largely seen by participants as textual and a case can be made for regarding such activity as literacy work - part of the 'everyday writing' of professional practice that helps frame academic identities (Lea and Stierer, 2009). Further research is needed into the genre and mode of writing that typifies OERs.

There was an alignment between the perceived values underpinning the Open Education movement and the personal and professional values of the project participants. Creating OERs and adopting Creative Commons licensing was a way for participants to overtly signal the embrace of these values.

Finally, having become aware of OERs through this project, all participants have continued to seek out and use OERs in their practice.

It is clear from what they say about the experience that developing their teaching materials as OERs has changed both the thinking and the behaviour of this small group of academics. Now that the embedding of OER in institutions is recognized as a priority we would like to investigate how creating OERs can be a catalyst for practice-change, with larger numbers, across disciplines. We are working on a follow-up project, Sustainable Texts and Disciplinary Conversations, collaborating with an institutional "OER champion" to engage academics in contributing their narratives about teaching to an e-book. Using similar methods to those described here, we will also explore the impact on those who participate.

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