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**Open Educational Resources
and Language Teachers' Professional Practice:
a Case Study of Engagement with OER**

Thesis submitted for the award of Doctorate in Education (EdD)

in Educational Technology

The Open University

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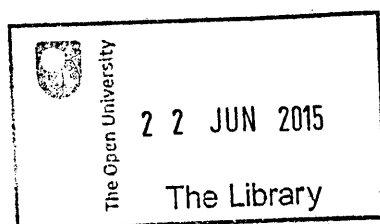
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Abstract:

Open Educational Resources (OER) are educational materials that are in the public domain or published with an open license. The OER lifecycle involves users locating, adapting, reusing and sharing OER. In the past fifteen years considerable funding has been devoted to creating OER repositories; however, it appears that the promise of OER has not been fully realised, and the anticipated adoption, reworking and sharing has had only limited success. There have been very few studies of 'real world' reuse of OER, and there have been questions about whether reuse is indeed occurring at all.

This case study explores engagement with OER from a specific OER collection, LORO (Languages Open Resources Online, www.loro.open.ac.uk), by teachers on two blended beginners' language courses at The Open University, UK. It fills a gap in research by investigating the teachers' practices in order to ascertain whether they follow the steps in the OER lifecycle, as this might have a positive influence in their teaching. The research also seeks to understand the often tacit professional knowledge that teachers draw on when engaging with OER, as it has been argued that, through open educational practices, this tacit knowledge can be made explicit, and therefore useable and shareable, and thus contribute to enhancing teaching quality.

The study found that teachers engage with the steps of the OER lifecycle: they find and reuse resources in their teaching, and adapt them to suit their specific requirements. Most of the teachers in the study mix resources they find with others they create themselves. Although they do not share them back through LORO, they do share them through other, less public means, especially with colleagues and students. Some of the teachers' cognitive, affective and systemic tacit professional knowledge was also made explicit, a first step towards making it usable and shareable.

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Chapter 1: Context and rationale for the study

In this chapter I introduce Open Educational Resources (OER) and open educational practices in the context of The Open University in the UK (OU), and discuss the engagement with OER of the Department of Languages, where this case study is based, and in particular with OER from its repository for language teachers. I then examine the 4 'Rs' of OER and the OER lifecycle, and consider the role that engaging with OER can have in enhancing teaching practices, especially in attempting to understand tacit knowledge so that it becomes useable and shareable. The chapter concludes with an overview of the thesis.

1.1 The UK Open University and Open Educational Resources

The UK Open University was founded in 1969 with the aim of opening up Higher Education to all. It is a distance university with an open admissions policy. It has developed a teaching and learning model, 'supported open learning', which enables students to study a course (or 'module') by studying the materials (including a module website with resources and activities, and usually also printed study resources) and complete their assignments with the support of a teacher, usually based locally.

The OU's values are inclusiveness, innovation and responsiveness, and its core mission is to be 'open to people, places, methods and ideas'. This is partly manifested through a commitment to making Higher Education (HE) open to all, and promoting social justice (The Open University, n.d., a). One of the ways the OU realises this commitment is through Open Educational Resources.

OER at the OU (The Open University, n.d.,b) include resources for learners available through media platforms such as OpenLearn, which contains more than 600 OU study units providing over 12,000 hours of study materials; the OU YouTube EDU channel, offering more than 1400 videos; and the OU iTunes U resources, which include e-books and audio-visual resources, and which have resulted in over 50 million international downloads since 2008. In addition, in the last decade the OU has been involved in a number of OER research projects, including SCORE, the HEFCE-funded Support Centre for Open Resources in Education (2009-2012); the OER Research Hub, which is investigating the impact of OER on learning and teaching practices; ORIOLE (Open Resources: Influence on Learners & Educators), a project investigating reuse of open resources; and OPAL, a EU-funded project aimed at fostering open educational practices. Finally, the OU is also active in a number of large OER international teacher development projects, such as TESSA (Teacher Education in Sub Saharan Africa) and TESS-India (Teacher Education through School-based Support in India)(The Open University, n.d.,b).

My interest in OER and open educational practices stems from work that has been taking place in the Department of Languages (DoL), where I am based, to engage with some of the OU-wide OER initiatives. DoL was quick to engage with OER from 2006 onwards by providing resources for OpenLearn, the OU YouTube EDU channel, and the OU iTunes U collection. The latter have been particularly successful: although language collections only represent around 10% of the total number of OU iTunes U collections, they account for nearly a quarter of downloads, making them the most popular resources on OU iTunes (Rosell-Aguilar, 2013).

In 2009-10 I was project director¹ of an OER project in DoL which was funded by the HEA/Jisc². The project team set out to create a repository of OER for language teachers, LORO, Languages Open Resources Online (www.loro.open.ac.uk), and to embed open resources and practices in our work. My interest in the present research stems from my involvement in that work.

1.2 The Department of Languages at the OU and the LORO repository

The Department of Languages at the OU offers language courses at a distance in French, Spanish, German, Italian, Mandarin and Welsh³, as well as in English for Academic Purposes. Although the courses are produced by a central team of academics based at the OU campus in Milton Keynes, they are delivered throughout the UK (and in the rest of Europe) via a blended model that includes part-time teachers working locally with students. The teachers, also known as tutors or Associate Lecturers (ALs), typically support a group of around 20 students on a module; they give students feedback on their assignments, moderate a forum for their group of students (known as the 'tutor group forum'), and run regular tutorials. Tutorials take place approximately once a month, and are mostly online with the occasionally face-to-face session. They use a synchronous audiographic conferencing system (currently Blackboard Collaborate, and Elluminate at the time I conducted my study). Through their module website, students also have contact with other students via module-wide forums. Each module has a tutor forum,

¹ I would like to acknowledge the work of my colleague, Anna Comas-Quinn, who was project manager of the LORO project.

² JISC, the Joint Information Systems Committee, was a public body formed in 1993, but has since evolved into a company, and is now known as Jisc, so I have used the new spelling of its name throughout to be consistent.

³ Welsh only until 2015.

where staff working on the module can discuss pedagogical and systemic (i.e. technical, administrative) issues with each other and with the course leaders. For reasons of simplicity, I use the term 'teacher' or 'AL' to refer to the teachers in this study, except in the direct quotes from ALs where they refer to themselves or their colleagues as 'tutors'; I have, however, maintained the term 'tutor' in expressions such as 'tutor group forum' and 'tutor forum'.

When the Department first introduced synchronous audiographic tutorials in 2002, a training programme for ALs was devised to enable them to teach in this new mode. However, it was felt that, to smooth the transition to online teaching, ALs should not straight away be expected to design resources for the audiographic conferencing system, but that these would be provided by the central academic team. Materials for online tutorials were therefore produced by the core course teams, and sent to the relevant teachers via data CDs; later they were made available through individual course websites. Over the years, as ALs became more experienced in using audiographic conferencing systems, they started modifying the resources provided centrally, and developing their own, demonstrating the creativity that Hampel and Stickler (2005) associate with experienced online tutors. However, there was no formal way of sharing these resources between ALs, or of making the resources for other courses and languages available to all.

The Department of Languages investigated how to share these resources more widely in order to promote best practice, and settled for creating a digital repository open to all staff and to the wider language teaching community. In 2009, we sought funding from HEA/Jisc to develop LORO, a digital repository for language teachers. LORO was based on the Language Box, the lightweight repository for languages developed by the EdSpace/Faroes projects at the University of Southampton (Morris, 2009), where the

technical development for LORO was also carried out. One of the features that differentiates LORO from other repositories is that it is aimed at teachers, rather than learners. As Comas-Quinn *et al.* (2011) and Comas-Quinn (2010) have explained, the HEA/Jisc-funded LORO project ran from April 2009 to June 2010, and included two phases. In the first, an environmental assessment was conducted (Tomás, 2009): a questionnaire went out to all ALs and was followed up with focus group discussions in order to ascertain the potential barriers and enablers to sharing resources. The repository was then developed and seeded by uploading all the 700 or so OU tutorial resources that had been produced centrally. ALs used LORO to access their tutorial resources, and were encouraged to search for and browse other resources in the repository to get ideas from other language materials and at different levels. The second phase of the project focused on user engagement, and ALs were encouraged to share their own resources via LORO. Throughout the project regular training and support activities were undertaken, and two further user surveys were carried out.

For the initial environmental assessment, an initial survey (n=129, response rate 39%) and three focus groups (of 11 teachers each) revealed that ALs perceived the creation of the repository as potentially beneficial in terms of workload and professional development, and as a source of inspiration. They were keen to have access to a wide bank of resources for all courses and languages, and liked the possibility of reusing and sharing resources produced by fellow ALs. The repository would also be open to others beyond the OU, and ALs had the choice of sharing their resources with OU colleagues only, or with the wider community.

The survey revealed that most ALs produced some of their tutorial materials from scratch, that they used the teaching resources provided by the central teams, and

adapted them to suit their own teaching style or their groups' particular needs. It also indicated that there was no strong culture of sharing teaching materials among OU ALs, a similar finding to that of researchers in other contexts (Byskov Lund, 2010). ALs reported a certain amount of informal sharing between close colleagues; within some regions ALs were encouraged to circulate their best resources and share them with new colleagues, digitally or in hard copy. Although in general ALs were positive about the idea of sharing materials via a repository, they raised concerns about potential barriers: lack of time and remuneration; lack of reciprocity (i.e. unequal participation); (lack of) quality and usefulness of materials; lack of feedback on their own materials; fears about copyright issues, and concerns about ownership and attribution not being acknowledged.

In March 2010, after ALs had started using LORO in their courses that same year, a short survey (n=173 teachers, response rate 55%) indicated that 87% of the respondents⁴ had downloaded materials for their tutorials from LORO, whilst 33% had used LORO to browse and download materials for other courses, languages or levels. A second survey in July 2010 (n= 53, response rate 17%) showed that 96% of respondents had downloaded resources from LORO (Comas-Quinn, 2010).

Although these results paint a fairly positive picture in terms of the ALs' reuse of OER from the repository, the second survey indicated that only a fifth of respondents (21.6%) had uploaded their own materials to LORO. Amongst those who had not uploaded any resources, 78.4% stated that they intended to do so in the future. Lack of time and concerns about copyright were the most frequent reasons provided for not engaging in the sharing of resources (Comas-Quinn, 2010).

⁴ Around 10% of DoL tutors had no need to access LORO to get their course tutorial materials, as a small number of courses started using Elluminate in February 2009, so those tutors would have already obtained their tutorial materials through their course websites before the start of this project.

In September 2014, LORO held over 3800 resources and had over 2000 registered users. Being an open repository, it had about 12000 users in the year from September 2013 to August 2014, and received 88000 page views. Returning visitors accounted for 25% of total visitors and, per visit, they spent on average 5'37" looking at 9.84 pages. Visitors came from more than 30 countries across the world (the top ten were UK, Spain, USA, France, Germany, India, Brazil, Ireland, Switzerland and Italy). In spite of these fairly healthy figures, and in spite of the intention expressed by such a large percentage of ALs in the March 2010 survey to share OER in the future, only a small number of users have uploaded their own resources, and even fewer have uploaded any derivative materials, i.e. those resources that are new versions of OER already in the repository and thus demonstrate repurposing by teachers.

As an example (Figure 1), of the 98 resources available in LORO for the Spanish beginners' course (L194) in March 2014, 51 were developed by the OU central academic team, and the remaining 47 uploaded by ten of the 60 or so ALs. Four ALs uploaded between eight and 12 resources each, and the others uploaded between one and three. The two ALs that uploaded the largest number of resources (12 and 10 respectively) were in fact 'LORO champions', specifically contracted to pre-populate LORO with some of their own resources when LORO was set up. One of the ALs who contributed eight resources uploaded OER that had been created as part of a scholarship project on dyslexia, and the other was a teacher who is also a researcher with a special interest in OER. Of the 47 resources uploaded by ALs, only five were repurposed versions of other OER in the repository.

L194 Resources: n 98

T= teacher, OU= central academic team

■ T1 ■ T2 ■ T3 ■ T4 ■ T5 ■ T6 ■ T7 ■ T8 ■ T9 ■ T10 ■ OU

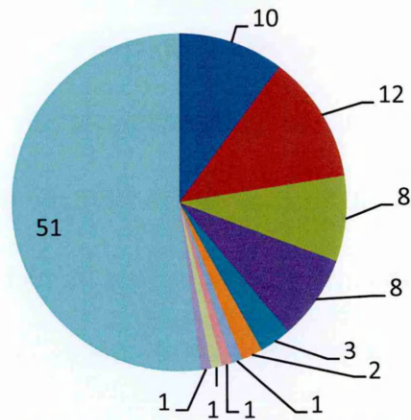


Figure 1: Uploads of Beginner Spanish Resources in LORO, March 2014

Figure 2 shows the resources for the French beginners' course, L192: out of the 64 resources available, 51 (80%) were developed by the central academic team, and the remaining 14 were uploaded by 6 out of the 68 ALs on the course; five of the six uploaded one or two resources each.

L192 Resources: n 64

T= teacher, OU= central academic team

■ T11 ■ T12 ■ T13 ■ T14 ■ T15 ■ T16 ■ OU

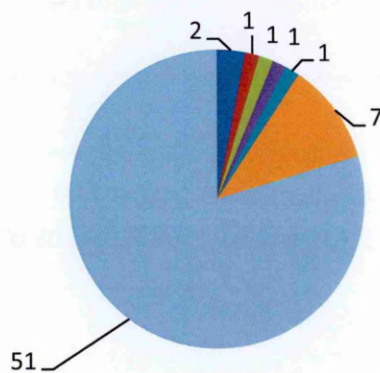


Figure 2: Uploads of Beginner French Resources in LORO, March 2014

Although LORO is well-established in the Department of Languages, and data from the site enables us to know how many resources are uploaded, viewed, and downloaded, analytics and the quantitative surveys we have carried out in the past only provide part of the picture of how LORO is actually being used. Indeed, whilst we know how many times resources are downloaded, we do not know what happens to resources once they have been downloaded, except for the very small numbers of resources that are reversioned and re-uploaded to the repository. We do not know if the OER are used as they are, or if they are modified by teachers, as the LORO Environmental Scanning survey suggested they might be. And if they are, we do not really know how and why are they being reversioned, or why they are not being shared again through LORO. Does this mean that they are not being shared at all, or are they being shared in other ways? The quantitative data provided by Google Analytics give information about website traffic patterns, including numbers of visitors, their location, the number of pages they visit, and the duration of their visit. The LORO cgi counter provides information about the number of times it has been accessed, the number of resources in the collection, and the number of registered users, amongst others. Each LORO resource page also has statistics about the number of times the resource has been downloaded, and the number of page hits. However, these data do not provide any evidence about the teaching practices of the ALs, such as whether they adapt resources, or use different activity types from those they might use if they were producing all the resources themselves. As a member of the academic team that produced the tutorial resources for ALs, and of the team that had set up the LORO repository, these were some of the unanswered issues that I reflected on as LORO was being embedded into our departmental practices. This gap in understanding is what prompted me to want to investigate further, by undertaking this doctoral study, the

way in which OU Languages Associate Lecturers engaged with OER in LORO, and the tacit knowledge they made use of when engaging in open educational practices.

1.3 The 4 Rs and the OER lifecycle

A key aspect of OER is that their open licences enable a particular set of practices to take place, which Wiley (2007) summarised as ‘the four Rs’, and which were then developed into a framework by Hilton *et al.* (2010):

- Reuse: use the work verbatim, just exactly as you found it
- Rework: alter or transform the work so that it better meets your needs
- Remix: combine the (verbatim or altered) work with other works to better meet your needs
- Redistribute: share the verbatim work, the reworked work, or the remixed work with others⁵ (Wiley, 2007).

As I will explain further in Section 1.4 below, the reason why these practices are important is because they might improve the quality of teaching and learning.

A number of authors have built on this framework and outlined the constituent elements of the OER cycle. The best known is in the *OER Handbook for Educators*, in which Gurell (2008) describes the OER lifecycle as being made up of the following steps, which represent a ‘typical development process’ (Gurell, 2008, p. 25):

1. Find. Start by looking for suitable resources which contribute to meeting the need or satisfying the desire. This may include using general search engines, searching specific repositories and finding individual websites. Some potential components may be available offline, including last year’s lecture notes, class projects, handouts for learners and other resources prepared previously.
2. Compose. With a collection of resources at your disposal, start piecing them together to form a learning resource for yourself, your fellow

⁵ In 2014, Wiley produced an updated framework to which he added a fifth ‘R’, retain, or ‘the right to make, own, and control copies of the content’ (Wiley, 2014)

educators and/or learners. This is a creative design process of building an educational resource from scratch and/or using components you have found.

3. Adapt. While composing OER, it will nearly always be necessary to adapt components to your local context. This may involve minor corrections and improvements, remixing components, localization and even complete rework for use in diverse contexts.

4. Use. The actual use of OER in the classroom, online, during informal learning activities, etc.

5. Share. Once an OER is finished, make it available for the open education community to reuse⁶ and begin the life cycle again (Gurell, 2008, p. 25–26).

Gurell acknowledges that although ‘the life cycle follows a logical progression, it is not necessarily followed sequentially in practice’, and that some parts can be done simultaneously (Gurell, 2008, p. 26).

Other authors (Pawlowski & Zimmermann, 2007; Glahn *et al.*, 2010; Santally, 2011; Clements & Pawlowski, 2012) have proposed other versions of the cycle, which are summarised in Table 1 (a fuller description can be found in Appendix 1). What all the cycles have in common, however, is that they assume that resources are found, adapted in some way and used, and then shared.

⁶In a small number of instances in the literature (Gurell, 2008; Abeywardena, 2012; Clements & Pawlowski, 2012) ‘reuse’ is spelt ‘re-use’. For the sake of consistency, I have used the non-hyphenated spelling.

Pawlowski & Zimmermann, (2007)	Gurell (2008)	Glahn <i>et al.</i> (2010)	Santally (2011)	Clements and Pawlowski (2012)
Search	Find	Find and access	Prepare Search and classify	Search
Validate reusability		Content-federation and enrichment		Evaluate
Reuse /Adapt	Compose Adapt	Author and compose	(re-)Purpose Value addition	Adapt
Validate solution	Use			Use
Republish	Share	Publish	Publish and deliver Review (Restart the cycle if necessary)	Share

Table 1: The OER cycle

Sharing and reuse are two of the phases of the OER cycle that have also been described as the twin concepts that underpin OER (Masterman & Wild, 2011); however, there is little evidence of these practices taking place. Petrides *et al.*(2008) indicated that, although the access to and reuse of OER by learners and teachers has been investigated, there is less evidence that people share the OER they produce and reuse the OER of others. In the literature review for his PhD thesis on *Patterns of Learning Object Reuse in the Connexions Repository*, Duncan (2009) concluded that ‘despite all the talk and article tagging about reuse, reports of studies of actual, ‘real world’ (i.e., not experimentally contrived) reuse of learning objects were basically nonexistent’(Duncan, 2009, p. 17). In a

blog post discussing Duncan's thesis, which he supervised, David Wiley went as far as to say that 'to me, this study begins to confirm the "dirty secret" of OER – that the reuse emperor has no (or only very scanty) clothes' (Wiley, 2009c).

The lack of evidence about OER reuse highlighted by Duncan (2009) and the suspicion expressed by Wiley (2009c) that it was simply not taking place intrigued me, and at the heart of my research is a quest to find out if there is any evidence of teachers reusing and adapting the OER in LORO.

1.4 Rationale for the study

The attributes, skills and expertise or knowledge required by distance teachers, and in particular by distance languages teachers, have been reviewed in the literature (Baumann et al., 2008; Murphy et al., 2011). Central to the role of the teacher in Open and Distance Learning is student support which, according to Tait (2000, 2003), has the following primary functions:

1. cognitive: supporting and developing learning through the mediation of the standard and uniform elements of course materials and learning resources for individual students;
2. affective: providing an environment which supports students, creates commitment, and enhances self-esteem; and
3. systemic: establishing administrative processes and information management systems which are effective, transparent and overall student-friendly (Tait, 2000).

Baumann and colleagues (Baumann *et al.*, 2008; Murphy *et al.*, 2011) researched the role of the distance language teacher and identified eight broad categories of the tutor role, which they mapped onto Tait's (2000) functions (see Table 2).

Knowledge, skills and competences (from Baumann et al 2008)	Functions of student support (from Tait 2000):		
	Cognitive	Affective	Systemic
Qualities and affective orientation		x	
Pedagogical expertise	x		
Subject matter expertise	x		
IT skills	x		x
One-to-one interactive support skills		x	
Self-management		x	x
Group support and management	x	x	x
Professional skills and responsibilities	x		x

Table 2: The tutor's role: Categories mapped onto Tait's (2000) functions, based on Bauman et al. (2008, p.384)

In undertaking this research, I wanted to understand the nature of the ALs engagement with OER and the concomitant open educational practices involved in working through the OER lifecycle (finding, composing, adapting, reusing and sharing). I believed that engagement with OER might necessitate the exercise of some of the cognitive, affective and systemic knowledge, skills and competences identified above, as well as, presumably, reflection, flexibility and openness to the ideas of others, and would therefore be a useful tool in enhancing the professional practices of teachers and the quality of teaching. Indeed, some of the current literature seems to support this view: after the initial emphasis on the creation of OER collections, in the second and current phase of the OER movement the emphasis is moving from resources to practices, or 'using OER in a way that improves learning experiences and [innovative] educational scenarios' (Camilleri *et al.*, 2014, p. 12). As Ehlers (2011) explains, 'OER usage, re-usage, sharing and creation are not an end in itself', but engaging with them has to result in better teaching practices and learning experiences (Ehlers, 2011, p. 7).

Several authors have indicated that this is indeed the case. For instance, West and Victor (2011) have suggested that ‘educators who are keen to explore ways to improve teaching and learning may benefit from considering the use of OER’ (West & Victor, 2011, p. 37). Similarly, Petrides *et al.* (2010) believe that OER ‘have the potential to enhance teaching and learning practices by facilitating communities of teachers who collaborate, share, discuss, critique, use, reuse and continuously improve educational content and practice’ (Petrides *et al.*, 2010, p. 390). This close engagement with OER is what defines open educational practices and, in their seminal edited book, *Opening Up Education* (2008), Iiyoshi and Kumar suggested that OER have the potential to ‘iteratively and continuously [improve] the quality of teaching and learning through effective development and sharing of educational innovations and pedagogical knowledge’ (Iiyoshi & Kumar, 2008, p. 5). Indeed, they argued that OER collections can enable teachers to better understand how others create and reuse resources and thus build upon one another’s experience and practical knowledge precisely because such collections facilitate the finding, reuse, adaptation and public sharing of resources (Iiyoshi & Kumar, 2008).

Dalziel (2008), writing in the same volume, was more critical and, whilst acknowledging the successes of the OER movement in developing and sharing resources through OER collections, considered there had been little progress when it came to sharing what he called ‘pedagogical know-how’ amongst teachers. He went on to explain that ‘what we lack is an agreed way to describe and share the teaching process [...] If we could share descriptions of educational processes together with advice on the reasons for their design, then not only could a novice educator benefit from the work of experts, but all educators could collectively adapt and improve each other’s work, leading to improved quality overall’ (Dalziel, 2008, p. 376). Dalziel advocated the use of the then emerging

field of learning design, and expressed the hope that ‘if we can combine the great ideas and reflections of educators with exemplars of good practice in the form of “runnable” learning designs, and share these in a way that they can be easily adopted and adapted by any educator, then we will make new progress towards the goal of transforming education through the dissemination of pedagogical know-how’(Dalziel, 2008, p. 389), something which had already been advocated in the OLCOS roadmap (OLCOS, 2007) the previous year.

Iiyoshi and Kumar (2008) went on to make a number of recommendations, including that practice and knowledge should be made visible and shareable. They pointed out that most pedagogic practical knowledge ‘is notoriously hard to make visible and portable’, as it usually ‘remains tacit and invisible’. Open educational practices, they argued, are about building the ‘intellectual and technical capacity for transforming “tacit knowledge” into “commonly usable knowledge”’ (Iiyoshi & Kumar, 2008, p. 435).

The aim of this study, then, was to address the lack of evidence about OER reuse by undertaking a case study of OER engagement in a particular repository. In doing so, I wanted to understand the practices of teachers when engaging with OER and to try to capture their tacit professional knowledge. Capturing that knowledge is a necessary first step towards making that knowledge shareable; by sharing it, it can be transformed into commonly usable knowledge that can improve the quality of teaching and learning. The specific research questions are stated at the end of the literature review in Chapter 2.

1.5 Overview of the chapters

Chapter 1: Context and rationale for the study

This chapter introduces Open Educational Resources and practices in the context of the UK Open University, and the work carried out at the Department of Languages around our OER repository for language teachers. I examine the 4 'Rs' of OER and the OER lifecycle, and explain the rationale for my study.

Chapter 2: Literature review

This chapter includes a critical summary of the research into OER reuse, adaptation and sharing. It then explores two lenses that can help understand the professional practice of teachers: the concept of teacher vulnerability and a capabilities approach. I then review what constitutes tacit professional knowledge and what is meant by professional learning, and examine a number of learning models. Finally, I formulate the research questions of my study.

Chapter 3: Theoretical perspectives, methodology and methods

In this chapter I explain the theoretical perspectives of my research, my research paradigm and research frame. I discuss the selection of participants, the methods of data generation, the ethical considerations and the methods of data analysis. I finish with a discussion of the pilot study, its limitations, and the lessons learnt.

Chapter 4: Findings and discussion

Chapter 4 starts with an overview of the resources used by the teachers in the study. I then present the findings and discuss these along the stages of the OER lifecycle: I first consider the location of the resources used by the teachers, I then focus on how

teachers compose, adapt and reuse resources, and I finally discuss sharing. I then examine the tacit professional knowledge used by teachers when engaging with OER.

Chapter 5: Conclusions

In Chapter 5, I explain the limitations of my study, and then report on how the study has provided answers to the research questions. I draw conceptual conclusions around the issue of the invisibility of some OER practices and the implications for research, and around policy and practice. I explain how my study makes a contribution to knowledge in this field, and reflect on the potential of a capabilities approach as a frame to understand teachers' engagement with OER. I then look forward to future research, and conclude with some reflective remarks on the process of studying for my doctorate.

Chapter 2: Literature review

This literature review provides a critical summary of the research into OER reuse, adaptation and sharing. It offers two lenses to understand the professional practice of teachers: the concept of teacher vulnerability and a capabilities approach. The literature review also investigates what constitutes tacit professional knowledge and, more broadly, what is meant by professional learning in the context of part-time HE teachers. It further examines which learning models might help to explain professional learning in this context. I conclude by formulating the research questions of my study, which are informed by the literature.

The area of OER practice and research is barely fifteen years old; because it is a new field, and because openness is at the heart of the OER movement, much of the thinking around OER is available through the more traditional academic peer reviewed journals, but also through conference proceedings (notably from the OER annual conference, <http://oer14.org/>) and conference presentations posted online (through research repositories, or sharing networks such as slideshare.com), project reports (e.g. from the HEA/Jisc funded projects), blogs (such as those by David Wiley, Martin Weller, or the Creative Commons team), Twitter posts and discussions on mailing lists (such as the OER-DISCUSS list at JISCMAIL.AC.UK). For this reason, I have used traditional, systematic research methods such as conducting Boolean searches in the Web of Science database for 'Open Educational Resources' (231 results), 'OER Open' (146 results), 'OER' under the 'Education, Educational research' category (97 results), etc.. At the same time, I have also followed more *ad hoc* leads through references in published articles and conference presentations, blogs and other social media references, and searches on Google Scholar.

2.1 Open Educational Resources

The OER movement was inspired by the Open Source Software movement (OECD, 2007; Baraniuk, 2007) and one of its core values is ‘the simple and powerful idea that the world’s knowledge is a public good, and that technology in general and the World Wide Web in particular provide an extraordinary opportunity for everyone to share, use and reuse it’ (Smith & Casserly, 2006, p. 10).

OER developed from earlier work on Reusable Learning Objects (RLO), ‘small (relative to the size of an entire course) instructional components that can be reused a number of times in different learning contexts’, and are digital, reusable, generative, adaptable and scalable (Wiley, 2002, p. 3). Downes (2001) made a convincing economic case for RLO by explaining how the traditional model of education where every teacher at every institution produces their own resources to teach a specific element of their course made little sense when compared to a model where a good quality, generic resource could be produced once and shared so that any teacher could use it as part of their course.

In 2002 the Massachusetts Institute of Technology (MIT) started providing free teaching materials online for anyone to reuse and adapt, remix, and publish again. That same year, UNESCO coined the term ‘Open Educational Resources’ defined as ‘the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes’ (UNESCO, 2002, p. 24). The William and Flora Hewlett Foundation, which has sponsored OER development since 2002, defines OER as follows:

OER are 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 repurposing 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 (The William and Flora Hewlett Foundation, n.d.).

Hylén (2006, p. 1) explains that the two 'most important aspects of openness have to do with free availability over the Internet and as few restrictions as possible on the use of the resource'. Wiley (2010, p. 16) makes a similar point, but expands the notion of use further when he explains how open, in the context of OER, means that they are 'for free under a copyright license that grants a user permission to engage in the "4R" activities' (reuse, revise, remix and redistribute). The design of Creative Commons licences in 2002 was therefore also instrumental in the development of OER.

The current definition of OER available from the UNESCO website seems to have evolved from the 2002 one by including the element of sharing and the use of open licences:

Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation (UNESCO, n.d.)

This is the definition of OER I use in this study. However, as White and Manton (2011) found in their research into OER reuse in HE, although most definitions of OER include open licensing as one of their main attributes, when researching actual reuse of OER, it is clear that teachers also reuse, adapt and share teaching resources that are not openly licensed (including their own, in many cases). White and Manton explained that to include only a discussion of reuse of openly licensed resources in their study would produce a 'highly skewed picture of current practice'; therefore, they decided to also include all other forms of digital resources used by the teachers in their study (White &

Manton, 2011, p. 13). Similarly, although all the resources published in LORO are OER, available under a Creative Commons licence, I found that the resources that teachers produced and shared informally through other means did not have open licences, but decided to still include them in my study.

2.2 Location, reuse, adaptation and sharing of OER

Although some attempts have been made to formulate a research agenda for OER, especially one that supports effective development and reuse of resources (Tucker & Bateman, 2009), this is still in progress. Indeed, in the initial phase of OER development, most projects were concerned with publishing OER content rather than with evaluating its use. Subsequently some evaluations of projects, their use and impact were carried out (McAndrew et al., 2009; Gourley & Lane, 2009; Sclater, 2010; MIT Open Courseware, 2006, 2009 and 2011), and research has also been conducted into the barriers and enablers of OER production and reuse (Byskov Lund, 2010; Windle *et al.*, 2010; McGill *et al.*, 2012) linking this area of OER research to work previously done on the use of learning objects and electronic resources (Recker *et al.*, 2004; Pegler, 2011). As the OER movement matures, some authors have highlighted the need to research and theorise the principles and practice of OER reuse (Lane & McAndrew, 2010) a view which, as Kozinska *et al.* (2010) pointed out, has been gaining momentum, especially in terms of developing research methods to understand the reuse and impact of OER, and to 'build a robust evidence base to support and enhance the design, evaluation and use of OER' (OLnet, 2008, p. 5). Currently, projects such as the OER Research Hub (<http://oerresearchhub.org/>) are developing an evidence-based approach to researching the impact of OER.

Research into the reuse of OER by teachers rather than learners is one of the items in the research agenda that seems to be gaining ground: in fact, there have been calls for research into how best to foster teachers' reuse of OER (Masterman & Wild, 2011) – an aspect that seems under-researched (Windle *et al.*, 2010) – , and how best to enable the infrastructure for sharing OER to appropriately support the needs of teachers (Davis *et al.*, 2010). Some years ago, Petrides *et al.* (2008) explained that there were still gaps in the research, arguing that 'we know little about users and what inspires reuse, and even less about what motivates OER creators to republish content that they have reused and augmented' (Petrides *et al.*, 2008, p. 102). In 2014, this still seems to be an issue, and Hassler *et al.* (2014) remind us that there is little research on OER, and that 'where research exists, it has tended to focus on OER production and policy – particularly in HE – rather than the experiences, quality perceptions, learning, and educational practices of OER users and producers' (Hassler *et al.*, 2014, p. 4).

In the business case of the *Good intentions* report, a Jisc-funded study on sharing learning materials, McGill *et al.* (2008) suggested a number of benefits that sharing learning resources bring to the global community, at national and at institutional level, and for teachers and learners. They include: supporting developing countries and disadvantaged learners; encouraging widening participation and lifelong learning; promoting the effective use of publicly funded resources; the enhancement of quality of learning resources; and improving practices and increasing access to learning. In the research report on the impact of OER commissioned by the Jisc OER Programme (Phase 2), Masterman and Wild (2011) remind us that the 2008 *Good Intentions* report (McGill *et al.*, 2008) concluded that "the landscape of policy, technology, and learning and teaching practice" had changed sufficiently and that sharing and repurposing learning materials

could become normalised practice. Yet, while the benefits of providing and using OER were generally accepted in principle, the cultural, technical, legal and institutional challenges remained complex and multifaceted – and in the case of OER use, largely under-researched’ (Masterman & Wild, 2011, p. 1). Conole (2013) offered a similar analysis, and argued that, whilst the OER movement has successfully promoted the idea of knowledge as a public good and encouraged the publication of OER, ‘as yet the potential of OER to transform practice has not been realised, [and] there is a need for innovative forms of support on the creation and evaluation of OER, as well as an evolving empirical evidence base about the effectiveness of OER’ (Conole, 2013, p. 227), a view also expressed by Camillieri *et al.* (2014). The aim of this study is to address some of the gaps in the research highlighted in the literature.

As mentioned before, Masterman and Wild (2011) consider sharing and reuse to be the two pillars that underpin OER, and yet explain that there is some lack of clarity about what *use* and *reuse* actually mean. Indeed, the Jisc OER *InfoKit* (McGill, 2012) defines reuse as ‘to make use of a resource as it is, for the original purpose intended’: it is not clear from this definition whether there is any difference between use and reuse. In the OER lifecycle, Gurrell (2008, p. 25–26) refers to use, ‘the actual use of OER in the classroom, online, during informal learning activities, etc.’, as a step that might happen after the resource has been adapted. In fact, it would seem more logical if what McGill describes was labelled use, and what Gurrell refers to was called reuse. Wiley defined reuse as to ‘use the work verbatim, just exactly as you found it’ (Wiley 2007; also Wiley 2009b), and later as ‘the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)’ (Wiley, 2014). So here, again, the difference between use and reuse is not clear. White and Manton (2011, p. 3) explain that an

individual might use a resource only once, but that a resource might likely be used many times by others, thus being reused. In their report, the term 'reuse' covers all instances of 'use', as it does in this study; I have only referred to 'use' when directly quoting from specific authors who prefer that term, or from the ALs.

The motivation for sharing and reusing OER, from an institutional and an individual perspective, ranges from practical reasons, such as saving time or promoting one's reputation, to more altruistic ones, such as contributing to the public good (Hylén, 2006; Browne *et al.*, 2010). Sharing teaching resources, however, is not new. Lane and McAndrew (2010) suggest that, traditionally, teachers have worked individually to produce and deliver their teaching experiences, creating their own resources with the technologies they are most familiar with for their particular teaching context and student group. They might have shared resources in their small communities of teachers teaching similar courses, possibly at the same institution, and engaged in minimal reuse (or adaptation) of materials. They argue, however, that OER make it easier for teachers to find other teachers' resources and that this can inform their own practice. Open access to OER, moreover, enables teachers easily to reuse someone else's resource in their teaching, rework other people's material, and even co-create or remix materials with others. One of the issues I wanted to investigate is the extent to which sharing OER is indeed a practice that occurs in real life in the context of my case study, as opposed to being merely a step in the idealised OER lifecycle.

Another important finding in OER research is that there appears to be little evidence of reuse. According to Dimitriadis *et al.* (2009), after a number of years in which various prestigious OER projects were set up (such as MIT's OpenCourseWare or the OU's OpenLearn), and despite the considerable support from generous funders (such as the

William and Flora Hewlett Foundation), OER repositories have not yet been widely adopted by learners and teachers as part of their daily practice. As Conole (2010, 2008) has pointed out, there seems to be a gap between 'the potential of technologies for learning and their actual use in practice'(Conole, 2010, p. 483).

In a blog post in 2009, Wiley commented on the dearth of empirically verifiable OER research, and questioned whether reuse of OER was indeed occurring (Wiley, 2009a). He explained that the most frequent argument he hears against this concern is that 'reuse and adaptation are happening in other places, [...] you just can't see them' (Wiley 2009a n.p.) - an argument made, for instance, by Glennie *et al.* (2012), who suggest that much reuse might indeed be happening 'below the radar'. Wiley argued that OER apologists have created a construct akin to dark matter, which he calls 'dark reuse'. Unlike the 'dark matter construct [which] was created to explain unanticipated-but-observed behavior, the dark reuse construct is created to explain anticipated-but-unobserved behavior. Rather than accepting the message of data which indicate that reuse is occurring only very infrequently, the apologists imagine an unobservable space offline in which reuse must surely be occurring' (Wiley 2009a n.p.).

Dimitriadis *et al.* (2009, p.200) suggest that one of the reasons for the disappointing level of adoption of OER and the integration into daily practice is that 'teachers do not fully understand the resources and therefore they cannot effectively reuse them'. Conole (2010, p. 483), in another context, explains that 'teachers lack the necessary skills to make informed judgements about how to use technologies and are bewildered by the possibilities'. Abeywardena (2012), reporting on the reuse and adaptation of OER from the point of view of the technologies available, also agrees that 'the reuse aspect of OER is yet to pick up momentum', and points to both 'the lack of

accessible technologies and the lack of technical capacities among the academic communities to effectively and meaningfully repurpose OER material for their teaching and learning needs' as two of the main inhibiting factors (Abeywardena, 2012, p. 50).

Lane and McAndrew (2010) also agree that, within the OU's OpenLearn, and as observed by others in other contexts, the success of the cycle of adoption, reworking and recontribution of OER to repositories has been limited, 'often with greater success coming from organised groups than from individuals' (Lane & McAndrew, 2010, p. 959).

Dimitriadis *et al.* (2009) suggest that, in order to make the resources more reusable, and therefore increase the effectiveness of the OER design and repurposing cycle, the design of OER should be made clearer to teachers and learners; they go on to explore how the design can be made more explicit through the use of Mediating Artifacts. When investigating if and how ALs reuse and adapt the OER from LORO, I wanted to ascertain to what extent they understand the resources provided, whether they need or use the accompanying teachers' notes, and find out about the relationship between their pedagogical understanding and the reuse or otherwise of the resource.

2.3 Vulnerability and capabilities

If teachers do indeed find OER difficult to understand, and therefore to reuse or repurpose effectively, the concept of 'teacher vulnerability' (Kelchtermans, 2005, 2009) might be a useful tool to make sense of how they might feel. Kelchtermans (2009) considers vulnerability to be a structural condition teachers find themselves in. He explains that there are three main elements of vulnerability in teaching:

(1) Teachers are not in control of their working conditions, be they those imposed by teaching agencies or exam bodies, or by policy demands; in the institutions where they

work, they have little control of the teaching environment, class size, curriculum, or the targets by which their performance is measured. For the ALs in this study, this is also true, as they have no control over any of those elements, and their job is essentially to support students in their independent study of course materials produced by others, who are also responsible for the assessment strategy, and for ratifying the students' final results.

(2) It is difficult for teachers to make a clear link between their teaching and their students' performance, as many other factors – personal, social as well as educational – impact on students' learning. In the case of ALs at the OU, this is an important issue: most of the students' learning happens elsewhere – through the course materials rather than in tutorials – and is beyond the control of the ALs as it takes place independently, rather than through a more traditional student/teacher relationship; and external factors – family, work, motivation, prior educational experience – are particularly important in the learning experience and success of mature students such as those at the OU.

(3) Although teachers make countless decisions about how to act in order to support their students' learning, they often do not have a solid basis on which to make those decisions, and therefore can find it difficult to justify them if challenged. Moreover, because teaching is a social act, however well-planned a lesson might be, a teacher is never in full control of it. As Kelchtermans suggests, 'although in much research, training and analysis the emphasis is on acting, planning, designing, there is also this passive dimension of undergoing surprise, puzzlement, powerlessness' (Kelchtermans, 2009, p. 266). In the case of ALs, I would argue that, however well-planned a tutorial, there is always an element of contingency. This is partly because student attendance at tutorials is not compulsory, and therefore it is difficult for ALs to anticipate how a lesson will develop because it is difficult to even predict the number of students attending. In the

case of online tutorials, students might also have different technical skills when using the system, which might influence their performance in class; issues of connectivity or sound quality might also impact negatively on the lesson. As for the decisions that ALs make when reusing or adapting OER in LORO, it might be useful to understand how far they can justify their choices, and what these are based on.

For Kelchtermans (2009), the condition of vulnerability can bring both positive and negative outcomes, and he considers that teachers should embrace this paradox, engaging in thoughtful planning whilst at the same time letting some of the unexpected happen. In the context of this study, uncertainty for ALs might include working with OER from LORO, rather than resources designed by themselves, as they might only have some degree of control over the OER, or a partial understanding of the way the activities are designed or the pedagogical principles that inform them. What seems clear is that we cannot look at resources in isolation, but must look at them in the context of the professional practices of teachers that use them.

The research literature also highlighted a growing interest in open educational practices, or OEP (e.g. the OPAL initiative, OPAL 2011). OEP have been defined as ‘a collaborative practice in which resources are shared by making them openly available, and pedagogical practices are employed which rely on social interaction, knowledge creation, peer learning and shared learning practices’ (OPAL, 2011a, p. 4) with ‘the intent to improve quality and innovate education’ (OPAL, 2011b). This is important because, as McAndrew (2011) points out, whilst OER are becoming established as learning materials available for teaching and learning, ‘the methods and practices that enable learners, teachers and institutions to best engage with OER are not yet established and may well

be more important in enabling change in education systems than the availability of the resources themselves'(McAndrew, 2011, p. 1).

When considering the reuse and sharing of OER by teachers, it would seem wise also to look at their adoption or otherwise of open educational practices, as they are also part of the OER ecosystem which consists of content and tools, but also processes, communities, institutions and people (Schmidt & Surman, 2007); and yet, few OER initiatives have focused on understanding this ecosystem (OER Africa, 2009).

If vulnerability is an integral aspect of the teachers' condition (Kelchtermans, 2005, 2009), another theoretical lens that might also help throw light into the complex professional practices of the teachers in this study is a capabilities approach. A capabilities approach (or human development approach, as it is also known), originally conceived by Amartya Sen (Nussbaum, 2011; Robeyns, 2006; Walker, 2006) and further developed by Martha Nussbaum (2011), is a framework first used in the area of human development to evaluate individual well-being, but which has then also gained ground in the field of education (Walker, 2006).

Nusbaum (2011) explains that the traditional dominant model in developmental studies (and developmental economics in particular) was one that measured the quality of life in terms of *per capita* increase in GDP. This measure, she argues, distorts human experience, as this crude approach to measuring human development puts economic growth above any other aim, regardless of the living standards of individuals. This model, she argues, is not a just one, and a capabilities approach offers a different theoretical paradigm which, although simple, is better able to recognize and respond to the complexities of human experience. Robeyns (2011) explains that the capabilities approach is a conceptual framework that enables the assessment of individual well-being

and the design of policies for social change by prioritising the 'beings and doings' of individuals (such as their genuine opportunities). This constitutes a marked difference from other approaches that assess well-being by focussing on subjective categories (such as happiness), or material means (such as income).

Indeed, for Sen (1992, p.81, quoted in Walker 2006, p.27), in order to understand human development, it is not enough to assess 'the resources or primary goods' that people hold, but one should also consider 'the freedoms they actually enjoy to choose the lives they have "reason to value". People,' he maintains, 'should be able to make choices that matter to them for a valuable life'.

As Nussbaum (2011, p. 20) further explains, capabilities are the answers to the question, 'What is this person able to do and to be'? They are not just abilities, but also 'the freedoms or opportunities created by a combination of personal abilities and the political, social and economic environment' (Nussbaum, 2011, p. 20).

When translated to the field of education, a capabilities approach might help us to understand not just which practices might take place in a given context, but also which of the practices teachers engage with are chosen because they are of value to them, and to what extent the contexts (political, institutional) in which teachers work provide them the opportunities to choose the practices they value (Walker, 2006).

This capabilities approach paradigm chimes well with current debates in Higher Education (Walker, 2006; Lozano *et al.*, 2012). In an educational context in which 'quality' and 'excellence' are measured according to student registration numbers, and targets for retention, completion and progression dictate the way we teach, we need to ask ourselves to what extent these measures provide us with an accurate understanding of what our students 'are able to do and to be' and the means to support their

development, or whether the current practices are not distorting our view of what quality should indeed be in Higher Education. Walker (2010) argues that adopting a capabilities approach in HE involves asking what education is for, what capabilities matter, and if the opportunities to realise those capabilities are being equitably distributed in our institutions and educational endeavours, that is, if some people 'get more opportunities to convert their resources into capabilities than others' (Walker, 2010, p. 898). A capabilities approach, then, provides a way to 'evaluate educational development and social justice' in Higher Education (Walker, 2006, p.100). And social justice is a central concern for Walker (2006, 2010); she understands pedagogy 'not simply as methods of teaching but as an interactive, relational and ethical process between lecturers and students, and students and students, where knowledge is mediated, where power circulates, and social and institutional structures penetrate'; she goes on to argue that 'there is always the possibility of either normalising or reproducing social and cultural inequalities and oppressive power relations, or of struggle against, and of transformation' (Walker, 2010, p. 899). Although this might seem too idealistic in an increasingly instrumentally-driven educational environment, the central concern about social justice is one that the capabilities approach shares with the OER movement and, incidentally, with the ethos of The Open University.

Indeed, the OER movement is based on the belief that knowledge is a public good, and that we now have the technical resources to make it available to everyone through the web; OER can enable 'education for all', one of the UN's millennium goals calling for everyone in the world to have a basic education by 2014 (Smith & Casserly, 2006). In the specific context of my study, justice might also mean whether all teachers can participate on a par in open educational practices. It is not an issue of whether they do or not, but

whether they have the freedoms and opportunities that might enable them to do so. In that sense, engagement with OER can be seen as an activity in a more complex ecosystem. The environmental, institutional, personal, social and pedagogic settings in which teachers operate, and which impose the constraints that make vulnerability a core characteristic of the teaching profession (Kelchtermans, 2009), are also the contexts which can 'provide the enabling spaces and conditions for development and learning in the way that individuals cannot do alone' (Walker, 2006, p. 37).

In the context of OER and OEP, methods to evaluate the success of the OER movement are still emerging. Whilst some have looked at barriers and enablers to using OER (Byskov Lund, 2010; Windle *et al.*, 2010; McGill *et al.*, 2012), others are concerned with metrics that demonstrate the extent of reuse (MIT Open Courseware, 2006, 2009, 2011); others still are seeking ways to evaluate and ensure the quality of resources produced and shared (Clements & Pawlowski, 2012; Misra, 2013). Looking at OER and OEP through the lens of a capabilities approach might prove a fruitful way forward, as it requires us to focus on what OER and OEP are for, what people (teachers, learners) are able to 'be and do' as far as this particular educational project is concerned, and what capabilities it promotes and fosters. As Walker puts it, 'We should assess (education) interventions according to the effects on things people value and have reason to value' (Walker, 2006, p. 46).

2.4 Professional learning of (part-time) teachers in HE

As I indicated in Section 1.4, engagement with OER is considered to have the potential to improve teaching quality. This is partly due to the fact that teachers engaged in open educational practices can benefit from sharing of resources, educational

innovations and pedagogical knowledge (Iiyoshi & Kumar, 2008), which might result in some form of professional learning. But how exactly does this professional learning take place? How do professionals learn and develop? We might also ask what they learn, how, where, when and why (Engeström, 2001; Sharpe, 2004; Knight *et al.*, 2006). Indeed, Engeström (2001) states that any theory of learning must answer at least four central questions:

‘(1) Who are the subjects of learning, how are they defined and located?; (2) Why do they learn, what makes them make the effort?; (3) What do they learn, what are the contents and outcomes of learning?; and (4) How do they learn, what are the key actions or processes of learning?’
(Engeström, 2001, p. 133).

Effective professional learning can be described as learning that is ‘continuing, active, social, and related to practice’ (Webster-Wright, 2009); in the context of in-service professional learning, much is delivered through professional development programmes, which, although they have become more flexible and learner-centred, still usually ‘remain as episodic updates of information delivered in a didactic manner, separated from engagement with authentic work experiences’, and are not consistent with the notion of situated learning (Webster-Wright, 2009, p. 703), where learners participate in communities of practitioners, gaining mastery of the relevant knowledge and skills through engaging in social practice (Lave & Wenger, 1991).

As well as these formal learning opportunities, which are organised, structured and intentional from the learner’s point of view, and which aim at gaining the knowledge, skills and/or competences stated in the learning objectives, learners can also engage in informal learning, which is often referred to as learning by experience and by exposure to learning situations. Informal learning is not intentional or structured in the same way as formal learning. Finally, non-formal learning occupies an intermediate space, and is

learning that 'may occur at the initiative of the individual but also happens as a by-product of more organised activities' (OECD, n.d.). As Knight *et al.* (2006) point out in their research on the professional learning of OU part-time teachers, a large number of HE teachers emphasise the role of non-formal learning in their professional learning, a finding consistent with professional development in other professions; as well as being life-long, non-formal professional learning is also key to 'confronting professional obsolescence' (Knight, 1998). I would suggest that a considerable amount of the learning around OER and OEP that ALs engage in falls within the categories of non-formal and informal learning.

A key issue in the literature about professional learning is the development of professional, personal or tacit knowledge, which can take place in the formal, informal and non-formal learning contexts outlined above. Eraut (2000, p. 114) refers to two types of knowledge: codified knowledge, or public or propositional knowledge, which is '(1) subject to quality control by editors, peer review and debate and (2) given status by incorporation into educational programmes, examinations and courses'; and personal knowledge, or 'the cognitive resource which a person brings to a situation that enables them to think and perform.' This includes both codified knowledge that has been personalised, as well as 'procedural knowledge and process knowledge, experiential knowledge and impressions in episodic memory', and skills. Whereas codified knowledge is explicit by its very nature, personal knowledge can be either explicit or tacit and is 'constructed through experience and its nature depends on the cumulative acquisition, selection and interpretation of that experience' (Eraut 1994, p.20). According to Polanyi (1958, quoted in Whitehead & McNiff, 2006, p. 34), professional practice is grounded on personal knowledge, the 'vast repertoire of experiential knowledge that [people] draw on

for making any one of the split second decisions that are a feature of everyday practice.’ Gladwell (2005) has also shown how professionals can make correct and accurate snap decisions or judgements seemingly in the blink of an eye, but that these are, however, grounded in their extensive, tacit professional experience.

Eraut (2000) advises that, while tacit knowledge is important in understanding professional knowledge, eliciting tacit or near-tacit knowledge is not without difficulties, and warns researchers to be both inventive and modest with their aspirations when investigating it, an issue which I needed to consider in the research design of my study.

Duncombe and Armour (2004) suggest one way of bringing out tacit knowledge, of making it explicit, is through Collaborative Professional Learning (CPL). They define CPL as ‘any occasion where a teacher works with or talks to another teacher to improve their own or others’ understanding of any pedagogical issue’ (Duncombe & Armour, 2004, p. 144), and explain that it includes a variety of concepts and processes such as mentoring or interaction with colleagues, peer coaching, critical friends, collegiality, and activities such as ‘observation, working on tasks together, sharing ideas or discussing the implementation of resources’ (Duncombe & Armour, 2004, p. 144). For Schuck *et al.* (2008), peer observation and the ensuing professional learning conversations are a way to question one’s own practice rather than just operate routinely using an ‘unthinking repertoire’. These practices force practitioners ‘to re-examine that tacit knowledge and question the ways [they] have been doing things’, and thus to ‘rethink the taken-for-granted in our teaching’ (Schuck *et al.*, 2008, p. 223).

Knight *et al.* (2006) believe that much professional development takes place as a consequence of situated social practices, and found that OU ALs wished they had more opportunities to engage in social learning (for instance through guidance from a mentor,

or through personal advice), and more opportunities to engage in conversations with subject colleagues (Knight *et al.*, 2006). In the experience of the LORO team, ALs are keen to engage in social learning through peer observation, collaborative writing or peer reviewing activities (Alvarez *et al.*, 2013). These sorts of activities can help to unlock implicit knowledge from the specific settings in which it is 'hidden', and enable teachers and researchers to capture it, share it (Knight *et al.*, 2006) and learn from it. However, as Knight *et al.* (2006) argue, in order to foster professional learning, it is first of all necessary to find spaces 'for the creation of shared meaning' [...], to 'encourage collegiality and participation' [...] and to set up appropriate procedures and practices to do so, usually through some form of reflective practice (Knight *et al.*, 2006, p. 332).

A usual starting point (Kahn *et al.*, 2006; Grushka *et al.*, 2005; Hatton & Smith, 1995) in defining the term 'reflection' is Dewey's (1933) idea that reflection or reflective thinking is the 'active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends' (Dewey, 1933, p. 6). Schön (1983) described reflective practice as the capacity to reflect on action in order to engage in a process of continuous learning. Indeed, for Schön (1983, 1987) technical rationality, which became institutionalised in the modern university, held that practitioners were problem solvers, who used theory and technique derived from systematic knowledge in order to solve problems. However, he pointed out that problems tend to present themselves to practitioners as 'messy, indeterminate situations' (Schön, 1987, p. 4), and that a professional education should equip learners with the means to become reflective practitioners, able to deal with messy problems by creating meaning around that practice (Kahn *et al.*, 2006, p.13). Zeichner and Liston (1996, p.6, quoted in Grushka *et al.* 2005, p.241) described the key features of a

reflective teacher, which include the ability to examine, frame and attempt to solve the dilemmas of classroom practice. This brings us back to the issue of teacher vulnerability (Kelchtermans, 2005, 2009), and seems to indicate that, when teachers experience the vulnerability inherent in working through the various stages of the OER cycle, as I suggested in Section 2.3, this might indeed provide opportunities to engage in reflective practice.

The review of the research literature conducted by Kahn *et al.* (2006) revealed that the social dimension is central to the reflective process. Although the studies they reviewed dealt mainly with fairly new entrants to the teaching profession, Khan *et al.*'s 2006 work seems to indicate that more experienced, part-time teachers also consider opportunities for social learning to be the most desirable. This social dimension includes 'dialogue, peers also involved in the reflective process, facilitators of reflective processes and the social atmosphere' (Kahn *et al.*, 2006, p. 38) as well as wider issues related to social aspects of the workplace and the learning programme undertaken.

Kahn *et al.* (2006) point out that dialogue is the most prominent form of social interaction in the studies they reviewed, and that it is considered to be central to the reflective process as it helps those involved to problematise practice and supports ongoing engagement in a supportive atmosphere. Schuck *et al.* (2008) also argue, drawing on Bullough and Pinnegar (2001), that 'teachers and other professionals negotiate their understandings of practice through reflection and learning conversations' (Schuck *et al.*, 2008, p. 216), or, as Senge (2006, p.8) describes them, 'learningful conversations that balance inquiry and advocacy, where people expose their own thinking effectively and make that thinking open to the influence of others'. They do, however, also remind us

that, in most workplaces, the prolonged engagement in professional conversations necessary for sustained professional learning is difficult to achieve.

In his discussion of non-formal learning and tacit knowledge in professional work Eraut (2000) explains that the application of scientific knowledge to practical situations involves the following:

- (1) Understanding the situation, which itself may require appropriate use of some prior knowledge;
- (2) Recognising that the concept or idea is relevant;
- (3) Changing it into a form appropriate for the situation; and
- (4) Integrating that knowledge with other knowledge in the planning and implementation of action (Eraut, 2000, p. 132).

According to Eraut, through this process '(a) the knower's capacity to think and act is enhanced by the learning involved in making the concept or idea available for use in that type of situation, and (b) their personal knowledge of the concept is enriched and its meaning extended by it being resituated in a new context' (Eraut, 2000, p. 133).

The above discussion relates to the context of OER engagement in the specific teaching instances that are the subject of this study in the following ways. First of all, in engaging with the OER lifecycle of locating, adapting, reusing and sharing resources, teachers might be engaging with the pedagogic knowledge necessary to reuse those resources effectively by reflecting on what is required in the lesson they are preparing, finding relevant OER and adapting them so that they are more appropriate to the context of their lesson, and integrating that knowledge with other professional knowledge in the planning and implementation of their teaching. In addition, reusing and adapting OER might enhance the teachers' capacity to think and act, and enrich their personal knowledge by engaging them in resituating teaching resources into new contexts.

According to Conole (2010), learning activities are made up of different components, including 'the type of pedagogy being used, the context in which the learning activity will be enacted, the types of intended learning outcomes associated with the activity, the nature and number of tasks to be undertaken by the learner, the associated tools and resources they will use and any formative or summative assessment' (Conole, 2010, p. 483). Conole goes on to explain that these sub-components are inter-dependent – pedagogical choices will influence task selection, different tools will have different affordances, and all these factors will influence the learning experience. I would argue that in engaging with OER, and in particular with the different stages of the OER lifecycle, teachers have to make complex pedagogical decisions which engage them in reflection, develop their professional knowledge, and enhance their practice.

To sum up, then, this review of the literature about professional learning of (part-time) teachers in HE has shown that professionals ground much of their practice in their professional, personal or tacit knowledge, which they might have acquired through formal, non-formal or informal learning opportunities. This knowledge is what enables experienced practitioners to deal with the demands of everyday practice. Collaborative, situated social practices and dialogue, as well as reflection, enable practitioners to examine their tacit knowledge and question practices they might take for granted, and engage in a process of continuous learning that enables them to deal with the dilemmas of classroom practice. Understanding teachers' tacit knowledge when engaging with OER – especially in non-formal and informal settings – is important because it enables this knowledge to become shareable, thus providing opportunities to enhance teaching quality.

Interestingly enough, our ALs have little opportunity for dialogue, other than in occasional staff development activities and online tutor forums. It is not surprising, then, that in several staff development activities organised by the LORO team, ALs have asked for LORO to provide a focus for conversations about practice. Some of the activities highlighted by Kahn *et al.* (2006) that particularly encourage dialogue are those that necessitate collaboration, such as collaborative curriculum design, or co-observation when those observing have to write a joint report. ALs have indicated during staff development events that they would like to undertake these types of collaborative activities around LORO. The current study, informed by the literature, regards dialogue as being a key tool to foster critical reflection and therefore, as I will explain in Chapter 3, aims to provide opportunities for dialogue through professional conversations.

2.5 Learning models

Wenger, McDermott and Snyder (2002) explain that tacit knowledge is often the most valuable knowledge for organisations, and yet it is very difficult to share. Communities of practice need to be cultivated, they argue, partly because they enable that tacit knowledge to be captured and shared within an organisation. But one could ask to what extent the concepts of communities of practice, situated learning, and legitimate peripheral participation (Lave & Wenger, 1991; Wenger, 1998) are useful in trying to understand tacit knowledge and its relationship with non-formal or informal professional learning of part-time lecturers in a distributed distance university such as the OU. Wenger sees learning as a social phenomenon and places it 'in the context of lived experience of participation in the world' (Wenger, 1998, p. 3), which seems to fit well with the professional learning on the job that Knight *et al.* (2006) refer to. Situated learning

involves learners participating in communities of practitioners and, through engaging in social practice, gaining mastery of the learning and skills needed to be part of that community of practitioners, moving from peripheral participation to full participation in the community (Lave & Wenger, 1991). Legitimate peripheral participation seems to provide a useful way to understand the professional learning of ALs. Indeed, whilst they are already experienced language teachers when joining the OU, and whilst they receive some induction and initial technical and pedagogic training around issues of open, distance and blended teaching and learning, they then engage to a lesser or greater degree in social practices that entail further learning. In the case of LORO, which is both a new tool and a new way of working, ALs work with both the tool and the practices it fosters in varied, more or less engaged ways. In doing so, they develop their skills and knowledge in ways that, I would argue, are often implicit rather than explicit.

Communities of practice are 'groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger *et al.*, 2002, p. 4). They have three fundamental elements: a domain of knowledge, a community of people interested in this domain, and shared practices that they develop. For Wenger (1998), the concept of community in communities of practice involves three dimensions: mutual engagement (doing things together); a joint enterprise (which might have specific external conditions and requirements, such as those imposed by the institution or by external cultural contexts, but which must have a communally negotiated way of working which members are mutually accountable for), and the development of a shared repertoire which includes 'routines, words, tools, ways of doing things, stories, gestures, symbols, genres,

actions or concepts that the community has produced or adopted in the course of its existence, and which have become part of their practice' (Wenger, 1998, p. 83).

The extent to which the part-time teachers in a specific department of a distributed, distance university such as the OU make up a community of practice might be open to some discussion. Poniatowska (2010) reminds us that, whilst part-time teachers at the OU might belong to a particular team of staff working on a specific course, and have links with others in their regions or nations, they often belong to different working communities, sometimes short-term and sometimes for longer periods, and sometimes with conflicting loyalties or perspectives. The fact that they are geographically dispersed makes contact between them heavily reliant on communication technologies to support and sustain their effectiveness and viability. However, the extent to which there is mutual engagement is debatable, and one might ask the extent to which part-time teachers do things together, and the extent to which they are just an aggregation of individuals doing the same things. Similarly, whether ALs are engaged in a joint enterprise when there is little space for communally negotiated ways of working, and where these are often imposed by the institution and its systems, is questionable. Finally, the extent to which ALs have a shared repertoire is also open for discussion. Do ALs, even those teaching the same subject, share and negotiate the beliefs, words, artefacts and tools they use, and are there spaces in the community to support this?

If the concept of community of practice is useful but not entirely satisfactory here, another model that might help understand the way in which some of the professional learning of part-time teachers takes place in a context such as the OU is that of expansive learning (Engeström, 2001).

In his theory of expansive learning, developed within the framework of cultural-historical activity theory, Engeström (2001) explains that theories of learning consider learning as a process where the subject (either an individual or a group or organization) 'acquires some identifiable knowledge or skills in such a way that a corresponding, relatively lasting change in the behaviour of the subject may be observed. It is a self-evident presupposition that the knowledge or skill to be acquired is itself stable and reasonably well defined. There is a competent 'teacher' who knows what is to be learned' (Engeström, 2001, p. 137). However, he argues that 'people and organizations are all the time learning something that is not stable, not even defined or understood ahead of time', and maintains that in such cases, we have to learn 'new forms of activity which are not yet there. They are literally learned as they are being created. There is, therefore, no competent teacher. Standard learning theories have little to offer if one wants to understand these processes' (Engeström, 2010, p. 153).

Indeed, Engeström and Sannino (2010) question Sfard's (1998) notion that there are two basic metaphors of learning, the acquisition metaphor and the participation metaphor, and believe this is misleading, suggesting a new metaphor of learning as expansion: in expansive learning, learners learn something that 'is not yet there', thus constructing a new object or concept through practice collectively as they go. Whilst I would suggest that some ALs who engage with open practices around LORO are indeed learning something that is not yet there and transforming the culture in which they work, others are possibly operating within the acquisition or the participation models.

Another model from the literature on organisational learning that has some similarities is the idea of adaptive versus generative learning (Senge, 1990). Whereas adaptive learning focuses on solving present problems, and is measured by incremental

improvements to the practice without questioning the fundamental assumptions of how things are done, generative learning requires experimentation, feedback and ongoing examinations of how problems are solved and implies new ways of looking at the world. The introduction of a new tool such as LORO implies a potential change of processes, goals and practices, and provides an opportunity for some participants to engage in generative learning whilst others might continue to learn adaptively, a distinction which might have implications for the professional development of teachers (see Section 5.3).

2.6 Research questions

As mentioned above, sharing is central to the OER movement, and its advocates maintain that sharing is a good thing (Huyen 2006, OECD 2007, Rolfe 2012) and that education itself is primarily about sharing (Wiley and Green 2012). Reuse is the other key practice of OER (Masterman *et al.*, 2011; Hilton *et al.*, 2010). The OER cycle has been conceptualised as consisting of a number of steps, broadly summarised as finding OER, adapting and reusing the resource, and then sharing it again with the community (Gurell, 2008, Pawlowski & Zimmermann 2007, Glahn *et al.* 2010, Santally 2011, Clements and Pawlowski 2012). This cycle of adoption, reworking and recontribution is considered by some as being idealised (Lane and McAndrew, 2010) and, to my knowledge, there is no evidence in the literature of whether individual teachers actually follow that cycle in their professional practice. There has been some research on the macro, meso and micro drivers, enablers and barriers to OER reuse and sharing (Pegler 2012). Macro issues might entail transnational or international questions and political, social or philosophical considerations, the meso might involve to institutional or domain specific factors, and the micro might relate to individual teachers and their courses, for instance (Pegler,

2011). However, there has been less research into 'real world' (i.e. non experimental) settings (Duncan 2009). There is a general consensus that there is a low level of adoption of OER (Dimitriadis *et al.*, 2009, Wiley, 2009b, Abeywardena, 2012), and Wiley (2009c) in particular seems concerned about the lack of reuse.

Although most OER research deals with learners rather than teachers, there are a number of reasons that have been put forward in the literature to explain teachers' lack of engagement with OER. These include:

- teachers not understanding the resources and therefore not being able to reuse them effectively (Dimitriadis *et al.* (2009);
- teachers lacking the necessary skills to make informed choices about technology, and being bewildered by the possibilities (this goes beyond the context of OER, and relates to technology adoption in general) (Conole 2010b);
- and teachers lacking the technical skills to re-purpose OER in effective and meaningful ways (Abeywardena, 2012).

So, in spite of the key role that sharing and reuse play in the OER philosophy, and the argument that they can improve the professional practice of teachers, there is little evidence that teachers engage in those practices, and there are some arguments about why this might be. My research aims to understand if and how the teachers in my study reuse the resources from LORO, whether they adapt them and share them, or not, and the reasons for this. In relation to the wider conceptual framework outlined above, the research seeks to provide a 'real world' study of OER reuse and to examine through a case study both issues around lack of reuse, and the reasons for such lack of engagement. The other aim of my research is to understand the tacit knowledge that teachers employ when using OER, as it has been argued (Iiyoshi & Kumar, 2008) that engagement with OER through open educational practices (such as repurposing and sharing) can help transform

tacit knowledge into 'commonly usable knowledge', and thus contribute to enhancing the quality of teaching and learning.

Therefore, the research addressed the following questions relating to the teachers in the case study:

- RQ1: Where do the resources used in the teachers' lessons come from? Do they come from LORO? (Find)
- RQ2: How do teachers reuse the resources and, more specifically, do they adapt them in any way? (Compose, Adapt, (Re)use)
- RQ3: Do teachers share the resources they make or adapt? (Share)
- RQ4: What tacit professional knowledge do teachers draw on when working with OER?

2.7 Summary

In this literature review I started by presenting a brief overview of the OER movement and discussed the definitions of Open Educational Resources that have emerged in the literature. I also highlighted some of the main gaps in the research on OER and identified the issues of sharing and reuse of OER as two key elements that are the focus of my research. I then considered both teacher vulnerability and a capabilities approach as lenses through which to understand teachers' practices in the context of their engagement with OER. I outlined some of the important issues around the professional learning of HE (part-time) teachers, in particular how tacit knowledge can be made explicit, especially through reflection, dialogue and collaboration. Understanding the tacit knowledge of teachers in the context of their reuse of OER in LORO can help to understand how these open educational practices contribute to further their professional knowledge and enhance the quality of teaching.

Whilst the notions of communities of practice, situated learning and legitimate peripheral participation are useful, they do not fully describe the realities of part-time teachers in a distributed HE institution such as the OU. Although most teachers are probably still operating in more traditional learning modes (acquisition, participation, adaptation) the concepts of expansive or generative learning appear more suitable for describing some of the more *ad hoc* learning that takes place, especially when this learning is 'not stable, not even defined or understood ahead of time', and the new forms of activity are being learnt as they are created (Engeström, 2001, p. 137). These models have helped to frame my understanding of the AL's engagement with OER, and the role they play in their professional learning. Finally, in this chapter I formulated my research questions, which were informed by the literature review.

Chapter 3: Theoretical perspectives, methodology and methods

In this chapter, I explain the theoretical perspectives of my research, the research paradigm I have adopted, and my research frame. I then consider the selection of participants, the methods of data generation, the ethical considerations under which the study was carried out, and the methods of data analysis. Finally, I describe how I conducted the pilot study, its limitations, and the lessons I drew from it.

3.1 Terminology

As Crotty (1998) points out, the terminology used for understanding and analysing the research process in the social sciences is often far from consistent. After considering a number of practices outlined by different authors (Burgess *et al.*, 2006; Cohen & Manion, 1994; Silverman, 2001; Thomas, 2013; The Open University, 2013b; Crotty, 1998), I opted for organising this chapter along the following elements:

- theoretical perspectives, or ‘the philosophical stance informing the methodology and [...] providing a context for the process and grounding of its logic and criteria’ (Crotty, 1998, p. 3), where I will also discuss my epistemological stance;
- research paradigm, which follows from the above, and which represents the ‘position[...] on the best way to think about and study the social world’ (Thomas, 2013, p. 110);
- the design frame, or methodology, which is ‘the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes’ (Crotty, 1998, p.3);
- the methods or techniques and procedures of data generation and recording, and of data analysis, as well as the ethical considerations of the study.

This is followed by a discussion of the pilot study.

Although the research literature often represents the relationships between the different elements of the research process as a 'logical sequential flow', in practice, they are much more fluid (The Open University, 2013b). For Thomas (2013), it is almost impossible to carry out research in the social science and education following a linear plan (Question -> literature review -> methods -> analysis), as research in these fields tends to follow a more recursive, iterative path (Thomas, 2013, p. 19). This reflects my own experience: although I started my Doctorate in Education studies with some idea of my paradigm and the design frame I might use, it was only by having to think about the methods and techniques that were most appropriate to gather and analyse the data to answer my research questions that I found myself revisiting and refining my methodological assumptions and the epistemological and ontological worldviews that I had taken for granted at the start. At the same time, re-examining these gave me a better understanding of the design frame and the specific methods of data generation and analysis I was using, and helped me to hone my research questions, which were further refined through critically reviewing the literature.

3.2 Theoretical perspectives

Ontology is a theory about the nature of existence or being, and epistemology is concerned with the nature of knowledge, or how we know what we know. Some authors distinguish between ontological considerations and epistemological stances when explaining their theoretical perspectives. Guba and Lincoln (1994), for instance, explain that research paradigms are based on ontological, epistemological and methodological assumptions, or assumptions about the form and nature of reality, the nature of the 'relationship between the knower (...) and what can be known' and how the inquirer can

'go about finding out whatever he or she believes can be known' (Guba & Lincoln, 1994, p. 107). Crotty (1998), on the other hand, believes that, in social science research, epistemological and ontological issues tend to emerge together. He explains that an objectivist epistemological stance holds that reality, and the meaning of that reality, are independent of whether anybody is aware of its existence. The researcher in this context is 'merely' discovering a meaning that has always been there. A constructionist stance, on the other hand, holds that 'truth, or meaning, comes into existence in and out of our engagement with the realities in our world' (Crotty, 1998, p. 8). Meaning, in this context, is not something that is discovered, but is constructed.

Ontology is concerned with the nature of reality. Realism is an ontological stance that asserts that reality exists outside the mind. Guba and Lincoln (1994) seem to equate a 'naïve' realist ontology – in which reality is seen as 'real' and possible to apprehend, albeit imperfectly –, with an objectivist epistemology, in which the researcher can study the object 'without influencing it or being influenced by it' (Guba & Lincoln, 1994, p. 109–110). Relativism, on the other hand, is an ontological stance that considers that it is possible to apprehend realities 'in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature[...], and dependent for their form and content on the individual persons or groups holding the constructions' (Guba & Lincoln, 1994, p. 110–111). Guba and Lincoln suggest there can be a link between this ontological view and a constructivist epistemological stance that links the researcher and the object of investigation so that the "'findings" are literally created as the investigation proceeds'(Guba & Lincoln 1994, p.111).

Crotty (1998) points out that a constructionist epistemological stance, however, is not necessarily at odds with a realist ontology. Realism asserts that reality exists outside

the mind; but this does not necessarily imply that 'meaning exists in objects independently of any consciousness' (Crotty, 1998, p. 10). Indeed, it is a perfectly sound practice to accept that things exist in the world independently of our consciousness of them, but that it is only through our consciousness of them that they are given meaning. For Crotty, a realist ontology and a constructionist epistemological view are quite compatible.

A similar argument is made by Hammersley (2011). He explains that two useful metaphors used to represent the research process are 'discovery' and 'construction' (Hammersley, 2011, p. 137), and that they have different ontological and epistemological characteristics. In the discovery model, phenomena are conceived as being independent of our knowledge of them, and we can 'get direct access to such phenomena': knowledge is indeed about uncovering reality, and enabling data to speak for itself (Hammersley, 2011, p. 137). According to this model, 'any effect of the researcher beyond establishing the preconditions required for valid knowledge is a source of bias' (Hammersley, 2011, p. 128). The construction model, on the other hand, posits that all knowledge is created, and 'what is produced is often taken to reflect what the researcher is', their 'socio-cultural identities and interests' (Hammersley, 2011, p. 128).

For Hammersley, both these models are problematic. The discovery model assumes that 'reality, or even truth, [are] directly perceivable' (Hammersley, 2011, p. 132), and ignores that our experience of the world is always mediated by our perceptions of the world, by language and by culture (Hammersley, 2011, p. 126). It also assumes that 'we can see truths about the world, that they are somehow embodied in reality' (Hammersley, 2011, p. 132). On the other hand, at its most extreme, 'the construction model involves an anti-realism that denies the possibility, or at least the accessibility, of

real phenomena existing independently of the research process' (Hammersley, 2011, p. 128).

Hammersley proposes a third model, 'understanding', which draws elements from the other two: he argues that 'while the meanings that inform peoples' beliefs and actions are not eternally fixed', it is nevertheless possible to capture them to some extent. Similarly, whilst meanings are to some extent constructed, they are not mere inventions, but have some basis in reality. 'So, while no account can capture a phenomenon as it is in its entirety, or in its essential nature, accounts *can* answer questions about phenomena in ways that accurately represent them'. This is, in his view, 'the modest, and exclusive, task of enquiry' (all the above quotes from Hammersley 2011, p.137). As I explain below, it is this subtle realist approach that informs my research paradigm.

3.3 Research paradigm

In the context of social research, research paradigms are 'positions on the best way to think about and study the social world' (Thomas, 2013, p. 110), which draw on the epistemological (and ontological) assumptions of the researcher.

According to the E891 study guide (The Open University, 2013b), the choice of paradigm influences:

- what is considered problematic, i.e. what warrants researching
- the types of questions that follow from this
- what kind of data, and therefore what kind of methods, are chosen and, importantly,
- within those methods, how the concepts/constructs to be explored are operationalised and analysed (The Open University 2013b, n.p.).

The two main research paradigms are positivism and interpretivism. Table 3, from Thomas (2013), summarises these two paradigms and what they mean in terms of the research process.

	Positivist	Interpretivist
The researcher aims to...	Predict and explain, usually generalising from carefully selected samples	Understand the particular, contributing to building a framework of “multiple realities”
The researcher uses (for example)...	Survey, experiment, structured observation	Unstructured observation, case study, unstructured interview, participants observation
The researcher aims to be...	Independent, an outsider	An insider, interacting with the participants
The researcher looks at...	Things that can be quantified and counted	Perceptions, feelings, ideas, thoughts, actions as heard or observed
The researcher analyses...	Variables, decided on in advance of fieldwork	Emergent patterns
The design of the research is...	Fixed	Flexible

Table 3: Positivist and interpretivist paradigms, from Thomas (2013, p.111, adapted from Oakley, 2000)

In this study, I worked within an interpretivist paradigm framed within a subtle realist approach as outlined above. I wanted to investigate how specific objects, OER, which exist in the ‘real’ world, are used by teachers. Moreover, I needed to understand the professional practices of teachers using OER both from a socially constructed and from an individually constructed point of view. As Beetham (2011) points out, the production and reuse of OER can be considered individually (the practices of an individual teacher producing, using or adapting resources), or socially (i.e. the practices of groups).

When teachers teach, they are engaged in social interactions with their students, but they are also engaged in an interaction with the practices, knowledge and beliefs of the socially constructed ‘teaching world’. These practices include lesson preparation; explicit statement of aims and objectives; reflection and evaluation of resources and own

performance after a teaching session; subject knowledge about language itself, but also about pedagogy and technology, and beliefs about the importance of considering students needs and differentiation, amongst others. Moreover, when they reuse OER from a repository such as LORO, they are sometimes also engaged with colleagues in social interaction and co-construction of meaning through commenting, forum discussions, etc., thereby participating in the collective culture of teaching.

I wanted to research the individual experience of ALs, because the way ALs reuse and adapt resources is an individual endeavour, and by reusing and adapting the resources each teacher is refashioning them so that they make sense for their teaching environment in accordance with their own teaching beliefs and practices in their own individual way. At the same time, I needed to understand the collective nature of the teaching culture, and how individuals participate in it; I understand individual experience as always being also socially constructed, so that ALs partly make sense of their own practice through shared meaning-making with colleagues and students. Similarly, in this study I wanted to observe and record what Miles and Huberman (1984, p. 20) refer to as the naturally occurring interactions from which patterns can subsequently be inferred and interpreted. At the same time, I do not advocate a naively realist approach. I am aware that as a researcher I impose my own interpretations on what I observe. Both the research participants and I construct our vision of the world through the mediation of language, and that vision is also co-constructed in the research process. In that sense, I agree with Hammersley's (1992) argument that a constructivist approach can be compatible with realism. For Hammersley, a subtle realist approach entails a definition of knowledge as beliefs whose validity we are reasonably confident of; the understanding that phenomena are independent of our claims about them; that our claims are only a

more or less accurate representation of those phenomena; and that the aim of the research is to represent reality whilst at the same time acknowledging that the researcher (and the participants) are representing reality from particular perspectives (Robson, 2011).

In this study, I have adopted an interpretivist research paradigm which seeks to 'understand' rather than 'explain' the reuse of OER and the adoption of open educational practices through a qualitative case study. My research design is flexible and, as the researcher, I am somewhat an insider who interacts with the participants in the study, engaging in observation and conversation in order to generate data that can be analysed to make sense of the patterns that emerge.

3.4 Design frame

The design frame, or research methodology is the 'scaffold' within which the research is structured, and includes, amongst others, experimental studies, action research, ethnography and case studies (Thomas, 2013; The Open University, 2013b).

Experimental studies are useful frames to conduct the type of research which seeks to understand causal relationships between phenomena. However, Thomas (2013) warns that demonstrating cause and effect in social or specifically educational research is challenging because of the many factors at play in any specific social situation, so it is difficult to isolate variables. Whereas I could have devised an experimental study to try to understand engagement with OER, it is precisely the actual, 'real world' research, rather than the experimental studies, which is most lacking in OER research (Duncan, 2009), so I wanted my study to be anchored in 'real world' research.

As Robson (2011) points out, in much real world research, research is not only concerned with exploring, describing or explaining a given question or issue, but there is also often a concern to ‘facilitate action, to help change or make improvements, to influence policy or practice’ (Robson, 2011, p. 39). In that sense, an action research approach might have seemed a helpful frame for my study. Indeed, action research is undertaken by practitioners to help them develop their practice. It usually aims to change practice and solve problems, and involves action based on reflection (Thomas, 2013). Although this might have been a useful frame for my study had I been an AL, as a creator and user of OER I interact with LORO in a different way from ALs. So, although from the perspective of my interpretivist paradigm I consider myself to be an insider who co-creates meaning by interacting with the participants, I do not think an action research frame would have been appropriate here, since as a user of the resources and as an academic involved with the development of courses, my experience and my use of LORO are quite different from that of the ALs.

My study partly draws on ethnography, as I wanted to learn from the research participants by observing how they engaged with specific OER in specific teaching events, rather than discussing OER reuse in the abstract. On the other hand, I did not want to observe lessons and intrude on the experience of students. In Section 3.6.2 I will return to this point and explain how I designed the study to fulfil this requirement.

The design frame I selected is that of the case study. A case study (Thomas, 2013) enables the researcher to gain a thorough understanding of an issue by examining aspects of a particular case or set of cases, which is researched in depth. The data, which may be in different forms (numerical, transcripts from interviews or notes from observations), can elucidate different aspects of the questions, and can be combined to

tell a particular story. Adopting a case study frame involves a trade-off, in the sense that the sort of claims one can make will not be generalisable, but will, instead, provide a detailed understanding of a specific phenomenon based on a restricted sample. Although not generalisable, the case, however, 'has to illuminate some theoretical point; it has to be a case of something' (Thomas, 2013, p. 150), and has to be interpreted and put in a theoretical context.

According to Yin (2003) case studies are 'the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events and when this focus is on a contemporary phenomenon within some real life context.' Case studies can be explanatory, descriptive or exploratory, and allow researchers to 'retain the holistic and meaningful characteristics of real-life events' (Yin, 2003, p. 2).

The choice of subject for my case study, the OU language teachers' engagement with OER in LORO, was partly guided by the fact that I already had a knowledge and interest in this area, derived from working with ALs and on LORO for a number of years, and also by the fact that I wanted to gain further understanding of a particular aspect of the repository use. LORO is also an example of a repository that is widely used by a professional community, i.e. language teachers at the OU. This case study is a snapshot, rather than being retrospective or diachronic, in that it was bound within a particular period of time within which the data generation occurred. However, when the participants talked about their practice, they also often referred to past experiences or future plans, so the time boundaries were somewhat permeable.

Finally, although I have access to some quantitative data provided by the analytics tools used in LORO (both Google Analytics and information available through LORO about numbers of resources published by specific authors, and numbers of downloads of each

resource), adopting a qualitative approach seemed more suitable when exploring a fairly under-researched area where the questions to investigate were still emerging (Masterman & Wild, 2011; Braun & Clarke, 2006), and more aligned to researching individual practice.

3.5 Selection of participants

Because the purpose of my study was to understand the practices of OU ALs as they engage with the resources from LORO, I wanted to be able to generate data that would show how these resources were reused in practice, rather than in more experimental settings, or more abstract accounts of how teachers use resources in general. At the same time, I also wanted to use methods that would enable me to understand the tacit professional knowledge teachers draw on when working with OER.

For these reasons, I decided to focus my data gathering around specific learning events, language classes (tutorials) that ALs had with their group of students. I wanted the events that ALs talked about to be comparable, so I selected ALs who teach on the French and Spanish (and, originally, also Italian⁷) beginners' courses at the OU. The courses, taught through a supported distance study mode, take students from absolute beginner to a level A2 of the CEFR⁸.

⁷ In the final group of participants in my study, though, the only Italian teacher who had agreed to participate dropped out almost immediately because of timetabling problems, so only French and Spanish teachers took part.

⁸ At this level, also known as 'basic user', the learner can 'understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment), communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters and describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need' (Council of Europe, 2001, p. 24). At the OU, students can include in their BA in Language Studies a language that they learn from scratch. This is usually combined with English language studies or with a language that they have previously studied to at least level A2 of the CEFR.

The choice was partly pragmatic, because the beginners' courses in these romance languages cover similar subject matter, so teachers would be covering comparable content at this stage in the course (functional topics including: introductions, asking for and giving personal information, expressing numbers including prices, expressing location, asking for and giving directions, and describing people and buildings; grammatical topics including: conjugation of verbs in the present indicative, adjectival agreement, prepositional phrases). The resources available in LORO for those modules are also fairly comprehensive. I chose to focus on French, Spanish and, initially, Italian (rather than Welsh, German or Mandarin, the other languages taught at that level at the OU) because I speak those languages, and I would therefore be able to understand the resources the teachers were using, any adaptations they might make, and the linguistic explanations they might provide when discussing the resources. Although it was fairly early in the beginning of the course, the ALs had all had the opportunity to meet their students at least once. Often they had met already once in a face-to-face setting, and once on the synchronous conference tool Elluminate, so the tutorials we were discussing were usually the third and/or fourth of the year.

As a result, the data generation involved a fairly homogenous group: OU ALs, teaching romance languages at a similar moment in the course (i.e. Tutorial 3 and/or 4). All ALs were experienced teachers at the OU, having worked for the OU for several years; all had used Elluminate, the audiographic e-tutorial platform used at the OU at the time, since its university- and department-wide adoption three years previously; and all had wider experience of conducting e-tutorials as they had all used the previous OU platform, Lyceum, before the introduction of Elluminate. The modules have similar learning outcomes, they are blended courses, and all students are supported through a course

website which includes tutor group forums for each AL and their student group, and a tutor forum for ALs and the course team to discuss course-related issues. Tutorials take place every three or four weeks, in a mix of face-to-face and online environments, and the first tutorial is often face-to-face.

The fact that only Spanish and French ALs took part probably made the participants more homogenous than if they had also included Italian teachers, as new editions of the French and Spanish modules had just been produced. For the Spanish module, some of the resources in LORO from the previous edition of the course had been slightly adapted, whereas for French the course team had adopted a more robust approach, and produced new LORO resources for their new edition. All ALs were made aware of the LORO resources as part of their familiarisation with the new edition of the modules. On the other hand, there had been no changes to the Italian module, so the Italian LORO resources were unchanged, and the teachers would have already been familiar with them.

In total, there were 40 ALs teaching on the Beginners Spanish module, 38 on the French, and 14 on the Italian one. For the pilot study the previous year, which I will report on in Section 3.9 below, I had held professional conversations with five Spanish, one French, and two Italian ALs. For the main study, I decided against including the ALs from my pilot study, which left 35 ALs in Spanish, 37 in French, and 12 in Italian. I wrote to all of them, explaining the aim of my study and asking if they would like to be involved (see Appendix 2). Nine Spanish ALs, six French and one Italian replied positively, although subsequently it proved impossible to meet with one of the Spanish ALs, two of the French and the one Italian, who dropped out of the study straight away. That left me with a total

of twelve participants, eight Spanish and four French out of a total of 72 Spanish and French teachers, or a sample of 16%.

3.6 Methods of data generation and recording

In this section I describe and justify the methods I used for generating the data for my study, in particular my interest in observation and in professional conversations (see Sections 3.6.1 and 3.6.2 below). Throughout this I raise some ethical considerations, which I also discuss in a more structured way in Section 3.7.

In this study, understanding the context of OER reuse was important, and I wanted to understand phenomena in their setting. For that reason, I wanted to concentrate on specific instances of OER use, rather than talk with ALs in general or abstract terms, so I decided to generate data as ALs were preparing a specific tutorial. This differs from many other studies which rely on survey, interviews or focus group data but which do not analyse specific instances of OER reuse (Pegler, 2012; Masterman *et al.*, 2011; Rolfe, 2012; Clements & Pawlowski, 2012). The aim of the individual meetings was to look at specific OER (or other resources) teachers were planning to reuse in a specific tutorial, and find out what changes, if any, they were planning to make to the resources and why. This was done through professional conversations (see Section 3.6.2 below). After the teacher had conducted the tutorial, I met with him/her again to find out if they had used the resources as they had planned or if they had made any further changes. I met with 10 of the ALs on four occasions, before and after two sets of tutorials; two of them I was only able to meet twice, because of issues around the timetabling of tutorials. The meetings took place between December 2012 and February 2013. Each meeting lasted approximately 45 minutes to an hour.

The professional conversations took place on Elluminate, the platform that ALs used for their teaching. This was partly for the sake of convenience (using a tool participants were familiar with, ability to record, play back and save the session), but also because Elluminate is an audiographic system, which enabled us to look at resources together and to share applications. In that way ALs were able to share their desktop with me as they looked at the resources in LORO and talked me through which ones they were going to use, why and how. They also shared the whiteboards they had prepared for their lessons. I wanted to use visual methods in this study for three reasons. First of all, ALs – like many other professionals – are not necessarily used to talking about their practice (Schuck *et al.*, 2008), and might feel uncomfortable, so talking about a third party object such as an OER was, as Banks (2009) puts it, a way of releasing ‘the burden of intense scrutiny of the self’, and displacing it onto a discussion of a resource. A second reason for wanting to use visual methods, in a subtly rather than naively realist way, is that they enable the researcher to ‘see’ the world as their subjects see it. Finally, when asking the ALs to upload the whiteboards they were using in their lesson, it enabled me to see exactly what resources they were using, and how they were using them – which also provided me with unexpected information about their technical skills, for instance.

Although I had originally considered also having focus groups where the ALs could meet each other and discuss some of their resources and their practices together, it proved to be too complicated to schedule a meeting at a time that was convenient for all, and I was also aware that my research had already made considerable demands on their time, so was reluctant to ask them to meet again.

3.6.1 Observation

From a professional point of view, and in my role supporting the development of OER and open educational practices in the Department of Languages at the OU, I am interested in peer observation of teaching as a 'collaborative, developmental activity in which professionals offer mutual support by observing each other teach; explaining and discussing what was observed; sharing ideas about teaching; gathering student feedback on teaching effectiveness; reflecting on understandings, feelings, actions and feedback and trying out new ideas' (Bell 2005, p.3, quoted in Bell & Mladenovic 2007, p.736). I also want to find ways of developing peer observation of teaching to suit new blended teaching contexts, including observation of the reuse of OER from LORO. For this study, rather than observing reuse in the teaching session itself, I thought that observing how teachers selected resources and discussing with them how they adapted them would shed some light into what is usually an individual and solitary but nevertheless pedagogically important process of lesson preparation and subsequent personal evaluation, an interest rooted in my aspiration to improve professional practice.

However, in undertaking the data generation, I was aware of my own position in the research. Peer observation is generally carried out as a developmental tool in the training of new teachers or in continuous professional development, or as a management tool for quality monitoring or evaluation of teachers. On the one hand, I am a peer, in the sense that we all work in the same university department. On the other hand, there are considerable differences in status and power: ALs work part-time, sometimes in precarious circumstances, and are not particularly generously remunerated for their work; I am a full-time, permanent member of the central academic team, and have chaired some of the courses on which some of the ALs work. Although I have no line

management responsibilities for ALs, I am part of the departmental management team and therefore, to some extent, an outsider. At the time I conducted the research, I was Head of Qualification for Certificate courses, overseeing the academic management of the courses in question, and responsible for the coherence of the courses in terms of their aims and objectives, assessment, teaching resources and student support.

Moreover, when LORO was set up, I was the project director, and have been involved in staff development and scholarship activities around LORO since then. Furthermore, as well as being a researcher, I am a practitioner, and one of the outcomes of my work on OER and around LORO is to facilitate and promote changes in the practice of ALs. In that sense, rather than considering myself an insider or an outsider, which both have advantages and disadvantages (such as acceptance and the understanding of the participants and the setting vs. the greater objectivity and reflexivity of the research when more distant from the object of investigation), I agree with Dwyer and Buckle (2009), who argue that this dualism is overly simplistic, and that the researcher can inhabit 'the space between'.

3.6.2 Professional conversations

When planning the data generation, I wanted to find ways to minimise the effects of any perceived differences in power relations between the participants and me, and to account for, or at least acknowledge, the possible effects that the discussion might have in the ALs' practice, not so much in terms of reactivity, although this was something I was mindful of, but in terms of my own interests as a practitioner in moving the Department towards adopting educational practices that are more open. As Robson reminds us, one of the issues about carrying out practitioner research in the context of one's own work is

that it becomes almost impossible to separate any changes from the research itself (Robson, 2011, p.7).

For this reason, I decided to frame the data generation in the context of professional conversations. Professional conversations are 'discussions among those who share a complex task or profession in order to improve their understanding of, and efficacy in what they do' (Britt *et al.*, 2001, p. 31). In the context of education, professional conversations are a mechanism for promoting and supporting teacher learning: through focussed and occasionally structured conversations, teachers are encouraged to reflect about their work, and the interlocutor can be, and often is, someone in a position of leadership or management. Professional conversations take different forms. They can be (1) formal reflective conversations after an observation of teaching, usually conducted in the context of teacher evaluation; (2) coaching conversations, often initiated at the request of a teacher, and designed to explore a specific issue or aspect of practice; or (3) informal professional conversations about practice that might take place on a more *ad hoc* basis (Danielson, 2009). The aim of professional conversations is to provide opportunities for teachers to engage in professional learning (Schuck *et al.*, 2008); thus, they do not simply describe or discuss the practice, but explore the reasoning that underlies those practices, they 'maximize thoughtfulness on the part of the teacher' and investigate, where relevant, alternative courses of action (Danielson, 2009). The researcher can go beyond the 'naïve' interview where the participant's contributions are viewed as an explanation (Silverman, 2001, p. 287) and probe and test the interventions by presenting different points of view or challenging what the participant might take for granted. In a discussion of how to build learning organisations, Senge (2006) writes about how we operate with *mental models*,

‘deeply ingrained assumptions, generalisations , or even pictures or images that influence how we understand the world and how we take action’ (Senge, 2006, p. 8). He argues that, for an organisation to become a learning organisation, it is important to turn the mirror inward, unearthing ‘our internal pictures of the world, to bring them to the surface and hold them rigorously to scrutiny’, and maintain ‘learningful conversations’, which, though a combination of inquiry and advocacy, provide opportunities for people to articulate their own thinking and open it up to the others for feedback (Senge, 2006, p. 8–9).

According to Danielson (2009), the more informal professional conversations tend to be the most productive. In a face-to-face setting, professional conversations often involve the observer dropping into a classroom for an unscheduled, short visit. This *ad hoc* nature means that the teaching episode observed is possibly more representative of the teacher’s practice than what is observed in formal, often evaluative, observations.

For my study, formally observing a lesson to see how teachers reuse OER would have meant that teachers might have perceived the situation to be more high stakes – as lesson observation is often associated with some form of performance monitoring or external quality assurance (Lomas & Nicholls, 2005; Hatzipanagos & Lygo-Baker, 2006); the lesson preparation might have been more thorough, or designed to impress me or to showcase their skills. Dropping in on ALs tutorials unannounced might have been less obtrusive, but seemed impractical on Elluminate, and would have been disruptive of the learners. Moreover, I did not feel that my role in the Department gave me the authority to do this, as I am not the line manager of ALs. Informal, *ad hoc* conversations are also difficult to set up in a distance environment. Unlike in conventional face-to-face settings, there is no staffroom where I could drop in to have informal professional conversations

with teaching staff. Each course has an online tutor forum, but again, it would be difficult to conduct one-to-one conversations there. Emailing ALs individually also seemed inappropriate, and I was not convinced that an online written medium would have been suitable for carrying our professional conversations. On the other hand, by arranging to meet the ALs on Elluminate and observing their selection of materials, and by having another conversation after the tutorial, I hoped to lower the stakes and, in that sense, try to gain a more 'authentic' view of the way that the ALs reused OER.

Danielson (2009) explains some of the key elements for a successful implementation of professional conversations in a work setting:

- finding time for the conversation;
- communicating the purpose;
- establishing trust;
- focussing understanding and consensus on the big ideas.

Finding time for the conversation was a difficult issue, not so much for the logistics of setting up professional conversations before and after the tutorials at times that were mutually convenient, but mainly because ALs were not being remunerated for their time. Although only one of the ALs I approached for the pilot study turned down the request because there was no financial benefit for her and she could 'not afford to do things for free', I did feel uncomfortable about asking ALs to devote so much of their own time to the meetings. On the other hand, several ALs said they had enjoyed talking about their work with me, and that the meetings had been useful to them.

In terms of communicating the purpose of the conversation, in the context of school education in the USA that Danielson (2009) was dealing with, the purpose was very much to improve student learning, and the conversations were focussed around this. In

the case of my research, the conversations are not about how to improve student learning *per se*, but about exploring ways in which ALs reuse OER and how this affects and possibly improves their practice – although it is true that, in the conversations, instructional aims and the students’ experience were often mentioned. In my initial email to the teachers, and again at the beginning of the first meeting, I explained the topic and the exploratory nature of the research.

To establish trust, I made clear the fact that any data would be anonymised, and offered to share any findings with the participants so they could give feedback. I asked for permission to record the meetings, and explained that they would be transcribed and analysed. I also tried to convey to ALs the fact that this was a learning opportunity for both of us, and indeed in some of the conversations we co-constructed solutions to specific issues they had with a particular resource or teaching-related issue. I also indicated my own vulnerability by acknowledging that I did not have answers to some of the questions, or that I did not have solutions to some of the issues they were bringing up. The fact that in the study I was also cast in the role of a research student I think helped with establishing trust by rebalancing power in the conversation, as they were cast in the role of the expert teacher whose views, experiences and practices I was interested in exploring and learning from.

At the same time, ALs work on their own and often feel rather isolated, and several of them explained that they enjoyed discussing their practice with me. The literature on peer observation of teaching highlights the role of the observer in promoting reflection, as engaging in critical thinking on an individual basis is difficult (Peel, 2005). Brookfield (1987) refers to a ‘critical helper’, who can provide a mirror onto our teaching, and help us understand and question our ideas and practices, and Shortland (2010)

similarly explains that the observer provides feedback which can 'act as a catalyst in building relationships through the development of empathy, respect and trust. The objective of successful peer observation is to harness the insight of critical friends to promote personal and professional development on a continuing basis, within a supportive framework' (Shortland, 2010, p. 301). During our conversations, ALs also asked me questions about their practice, and about that of others I had observed, thus also acknowledging my own professional knowledge and rebalancing my status towards being their equal.

In terms of focussing understanding and consensus on the big ideas, in Danielson's context this involves a framework structured around the four main areas of planning and preparation, the classroom environment, instruction and professional responsibilities (Danielson, 2009). In this study, the 'big ideas' were related to the OER cycle, in other words the extent to which ALs engaged in finding, using, adapting and sharing OER, and the tacit professional knowledge that influences their decisions about reusing OER in their setting.

To sum up, professional conversations coupled with a focus on discussing the actual OER used seemed to offer a flexible method for me to explore the resources that ALs were using in their teaching, the practices they engaged in regarding the location, reuse, adaptation and sharing of OER, and the tacit professional knowledge they brought to the process. As highlighted above, professional conversations were also a way of mitigating some of the effects of any perceived differences in power relations. This was certainly one of the important ethical issues I had to deal with in my study, but in the next section I want to review these in a more systematic way.

3.7 Ethical considerations

The 2011 *Ethical Guidelines for Educational Research* published by BERA, the British Educational Research Association (BERA, 2011), explain that all educational research 'should be conducted within an ethic of respect for:

- The Person
- Knowledge
- Democratic Values
- The Quality of Educational Research
- Academic Freedom' (BERA, 2011, p. 4).

Researchers also have responsibilities towards research participants, the sponsors of research, the community of educational researchers, and to educational professionals, policy makers and the general public (BERA, 2011). The document includes guidelines about gaining voluntary informed consent and the right to withdraw (BERA, 2011, p. 6). Participants should also be given confidentiality and anonymity, and researchers must abide by the Data Protection Act (1998) in terms of the storage, use, and subsequent destruction of the data.

As far as methods are concerned, the BERA *Guidelines* (2011) state that 'researchers must employ methods that are fit for the purpose of the research they are undertaking' and provide an explanation of how far their findings are reliable, valid and generalizable (BERA, 2011, p. 9).

For this study, I sought to abide by the BERA *Guidelines* (BERA, 2011). In particular, I hope my account of my research methods is considered to be a 'full, honest and amenable justification on the final choice of methods' (BERA, 2011, p. 9), and that by undertaking this research in an ethical and professional manner, I have fulfilled my duty

to the community of educational researchers. In terms of my duty to make public the findings of my research, I have sought to do so during my EdD studies, by presenting some of the findings at conferences and publishing some work related to the pilot⁹, and will endeavour to continue doing so in the future (for further details, see Section 5.6).

In terms of the participants, I sought to gain voluntary informed consent, and explained to them how I would ensure I would protect their anonymity and confidentiality, and how I would deal with protection and destruction of the data, as well as how they could withdraw from the study (see Appendix 2). One of the issues that I made clear was that I might want to include some of the resources they had published in LORO in my thesis or in any presentation or publication of the data. I realised during the pilot study that this might actually identify the participant, and thus breach the promise to ensure their confidentiality and anonymity. I therefore explained explicitly in the contact letter that if I wanted to use any resource from LORO they had produced, I would ask their permission first. In fact, I had to extend this to include resources that were not published in LORO but shared through other means, such as in the tutor forums, or with students.

Although the OU did not commission the research in any way, it was the research sponsor for several reasons: it is both the employer of the ALs that participated in my research and my own employer; the financial sponsor of my studies – as my fees as a student are waived –, as well as being the institution where I am studying for my Doctorate in Education. I therefore had to abide by the *OU Code of Practice for Research at The Open University* (The Open University, 2013a) and by the *OU Ethics Principles for*

⁹ I have published a paper on qualitative methods for researching teachers' (re)use of OER, based on the methodology section from the pilot study, and an article on the pilot study, and an article on the findings from the pilot study (Beaven, 2013a, 2013b)

Research involving Human Participants (The Open University, 2006). Before contacting the participants I sought consent from the Open University Human Research Ethics Committee (HREC). Amongst the documentation I provided were the proposed consent form, see Appendix 3) and details about Data Protection (see Appendix 4). Following successful consideration by the HREC, a memorandum was issued confirming that the research protocol as submitted for ethics review was approved by the Human Research Ethics Committee by Chair's action (see Appendix 5).

3.8 Methods of data analysis

The research methods literature points to two main different strategies to analyse qualitative data, which can be broadly described as categorising or narrating strategies: categorising, or searching for concepts that bring out the issues, can be done through coding and thematic analysis of the data, whereas a narrative strategy involves creating profiles, vignettes or case studies, for instance (Maxwell, 2012). Categorising strategies bring together similar elements in a paradigmatic way, but run the risk of presenting the data in a way that is decontextualised; narrative strategies, on the other hand, tell a story in a way that enables the reader to understand the context, but for that reason are not necessarily analytical and are often used to illustrate a categorizing analysis (Maxwell, 2012). In this study, I used a categorising strategy, as I felt it was the most appropriate way to bring out the key issues. Although I experimented with narrative strategies in one of my progress reports and created three vignettes to illustrate engagement with the OER lifecycle, I decided against including them in the final thesis, mostly due to the limitations imposed by the word count.

The research literature also reveals that the methods for analysing one's data are varied, and depend, to some extent, on the type of data that has been generated, but also on one's research questions and theoretical and methodological considerations. So, for instance, qualitative data such as the transcripts of the recordings in my study could be analysed qualitatively or quantitatively. A qualitative analysis might be more appropriate when seeking to interpret the meaning of the data; on the other hand, a quantitative analysis conducted through some form of statistical analysis of small units of text might be more appropriate to establish, for instance, frequency of particular linguistic features. My research was more concerned with understanding broad themes than more granular linguistic features, so the former was more suitable. Guest *et al.* (2012) point out that the method of data analysis that one chooses also depends on one's analytic purpose. Qualitative data analysis can be undertaken for purposes of exploration or confirmation. Exploratory approaches, such as the one I adopted here, are content-driven, and codes tend to be derived from the data and emerge through the analysis. On the other hand, confirmatory approaches are hypothesis-driven; codes have to be generated from hypotheses, and the codes and analytical categories used tend to be predetermined by the hypotheses (Guest *et al.*, 2012, p. 7).

When considering how to analyse the transcripts, I had to decide if the text itself was the object of analysis, or if the text was a proxy for experience. The former would have been appropriate in a study of conversation, or of the use of specific language structures or vocabulary; the latter was more relevant when analysing the 'perceptions, feelings, knowledge, behaviour' of the participants (Guest *et al.*, 2012, p. 9). Had I used a data gathering tool that produced very systematic and structured data (for instance through free listing or pile sorting), the analysis might have involved the production of

taxonomies or mental maps, for instance. However, because the data generated were in the form of free-flowing text, the analysis was done through generating codes from the text. The methods usually used in this context include classic content analysis, grounded theory, and applied thematic analysis (Guest *et al.*, 2012, p. 9).

Classic content analysis is hypothesis-driven, and uses predetermined specific codes and analytical categories generated from the hypothesis that is being tested in order to confirm the hypothesis (Guest *et al.*, 2012, p. 7). Grounded theory, on the other hand, is 'a set of inductive and iterative techniques designed to identify categories and concepts within a text that are then linked to formal theoretical models' (Guest *et al.*, 2012, p. 12) which are built from the data; it uses a systematic, constant comparative technique, requiring exhaustive comparison of all the text segments in the data set. Finally, applied thematic analysis is much more exploratory than classic content analysis, and works by identifying key themes in text that are transformed into codes. Like grounded theory, in applied thematic analysis interpretation is supported by the data, which can be used to build theoretical models, but it is equally suitable to find solutions to real-world problems. It also enables the use of non-theme-based and quantitative research in order to add analytic breath to the research (Guest *et al.*, 2012, p. 17).

For these reasons, in this study, I decided to use applied thematic analysis. It is an inductive analysis, which involves a bottom-up, data-driven approach where the researcher codes the data without trying to make them fit into the researcher's preconceptions, although the extent to which the researcher can distance themselves from their theoretical stance can be an issue. When using an inductive approach, it is also often the case that the research questions evolve through the coding process (Braun and Clarke 2006), which I experienced both in the pilot study and in the main study.

Braun and Clarke (2006) point out that thematic analysis is not a linear process but a recursive one, so that the researcher moves backwards and forwards between the different phases, which they identify as follows:

1. Familiarization with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

The process of doing thematic analysis starts when the researcher starts to 'notice and look for patterns of meaning and issues of potential interest in the data' (Braun & Clarke, 2006, p. 86) and this can actually start during the data generation itself. The endpoint is the reporting, so analysis involves constantly moving backwards and forwards between the whole data set, the coded extracts, and the analysis. Braun and Clarke (2006) also explain that writing is an integral part of analysis, and not something that takes place at the end, and that therefore the researcher needs to start writing in the first phase of the process, making notes on potential coding schemes, and continue writing through the entire process of coding and analysis.

The data corpus I have is multimodal, as the professional conversations were recorded on Elluminate, which provides a recording of the visual screen as well as the audio, and a transcript of the text chat. I transcribed the audio of the recordings, and also included in my data set the screens discussed for each tutorial. The chat was hardly ever used during the meetings, except for issues to do with problems with the sound quality in Elluminate, so I did not include it in the data set.

The analysis of the transcripts and of the screens from the resources used in tutorials was carried out using NVivo9. Because data analysis is a recursive process, I found that the analysis, to some extent, started before the professional conversations had been transcribed, as during the meetings with the teachers themselves I could see themes beginning to emerge. For instance, in the context of sharing (or not) their resources, some of the teachers talked about their lack of confidence, and this prompted me to read more on this topic, and to discuss this issue with subsequent participants. Similarly, before tackling the analysis with NVivo, the act of transcribing and of checking the transcriptions, and of saving the Elluminate whiteboards into a jpeg format, naming them and classifying them into different folders for each teacher, enabled me to start immersing myself in the data. Once the transcripts and the tutorial resources were ready, they were imported into NVivo9, and the coding process began. I first analysed the transcripts, following a bottom-up, content-driven approach, keeping in mind the research questions as I coded the data. This included looking for evidence in the data of whether participants engaged in finding, composing, adapting, reusing and sharing OER, and formulations of the tacit professional knowledge that influences teachers' engagement with OER. This does not mean, however, that I used those as predetermined codes. I then also analysed the resources used in the first tutorials. For these, the coding was much more focussed, and it centred on specific aspects of the OER lifecycle: the provenance of the resource used, changes made to resources, and the sharing of the resource after use. The codes were fine-grained, and resulted in the emergence of 50 nodes in total (see Table 4).

Nodes	Number of coding references	Nu mber of items coded
nodes\\change to resource or activity (or not)	90	24
nodes\\own pedagogy	77	21
nodes\\knowledge (professional, used to prepare tutorial)	68	22
nodes\\contingency	67	20
nodes\\provenance: LORO	63	61
nodes\\affective	50	17
nodes\\vulnerability	50	18
nodes\\provenance: own resource	48	48
nodes\\sharing	45	16
nodes\\feedback to or from other teachers	42	18
nodes\\rationale for choice	35	17
nodes\\understanding resources	35	11
nodes\\own resources	34	15
nodes\\using other people's resources	33	14
nodes\\face to face vs. Elluminate	32	16
nodes\\sharing practices	31	15
nodes\\professional conversation	30	17
nodes\\sharing resources	27	10
nodes\\rationale for tutorial	25	16
nodes\\provenance: another teacher	24	24
nodes\\reflecting	23	11
nodes\\sharing aims of tutorial with students	22	15
nodes\\activity went well	21	7
nodes\\creating own resources	20	10
nodes\\lesson plan and notes	20	11
nodes\\feedback from students	17	9
nodes\\at the end of the tutorial	14	11
nodes\\routine	14	9
nodes\\sharing with students	12	8
nodes\\break out rooms	11	7
nodes\\how do you see yourself as a teacher	11	11
nodes\\re-evaluation during conversation	11	4
nodes\\versatility of resources	10	7
nodes\\creativity	7	5
nodes\\provenance: online image	6	6
nodes\\recording tutorial	6	5
nodes\\staff development	6	3
nodes\\up your sleeve	6	5
nodes\\capabilities	5	4
nodes\\enjoy the job	5	5
nodes\\provenance: course book	5	5
nodes\\information gap	4	4
nodes\\provenance :LORO reversioned	4	4
nodes\\compose	1	1
nodes\\provenance: another teacher reversioned	1	1
nodes\\provenance: LORO remix	1	1
nodes\\provenance: Lyceum	1	1
nodes\\provenance: Lyceum reversioned	1	1
nodes\\provenance: other books	1	1

Table 4: Nodes emerging from the analysis

The nodes were then organised around two overarching themes and three subthemes:

- OER lifecycle (nodes in this theme included e.g. provenance of resources, changes made to resources, rationale for choice, composing, sharing)
- Professional knowledge, encompassing:
 - Pedagogical and technical issues (e.g. knowledge about grammar, teaching methodology, Elluminate)
 - Affective issues (e.g. empathy with students, teacher vulnerability)
 - Contingencies to deal with unexpected events (relating to the notion of teacher vulnerability)

The first theme is the main focus of the analysis, whilst the theme of professional knowledge, and the subthemes identified, are used to shed light on particular aspects of the analysis of the OER lifecycle, and are also dealt with in a separate section in the findings and discussion, mirroring the research questions.

3.9 The pilot study

In this section I present the design and discuss the findings of the pilot study, and conclude with the lessons I learnt from undertaking the pilot.

3.9.1 Design of the pilot study

The pilot study took place between the end of November 2011 and the beginning of January 2012. The aim was to pilot the methods of data generation, and specifically whether professional conversations around specific resources before and after a tutorial would generate sufficient useful data. I also wanted to use the pilot as an opportunity to refine my research questions.

The original research questions of my pilot study were:

- how and why ALs use OER in their teaching, rework existing resources, or even co-create (or remix) materials with others in a subject-specific OER teaching repository such as LORO;
- embedded in that first question, a second question is whether teachers understand the resources and how to use and adapt them effectively and, if not, whether this is an impediment to their reuse, as Dimitriadis *et al.* (2009) and Conole (2010) seem to indicate;
- and finally, the role that OER and OEP play in the professional learning of teachers.

For the initial study I contacted 14 ALs teaching on the French, Spanish and Italian beginners courses, of which eight agreed to take part in the pilot. In the study I used selective sampling, i.e. I identified different factors I wanted to include and selected the participants accordingly. I wanted to ensure participants represented a mix of languages taught, so ensured that teachers of French, Spanish and Italian were represented. I also wanted a range of experiences with using LORO, so I selected some ALs that were regular contributors to LORO and had participated in OER staff development events, some that had published only occasionally, or had expressed an interest in OER by occasionally attending LORO staff development events, and some that had not contributed any resources or attended any events.

I used the pilot study to test the data generation and analysis methods which I then implemented in the main study, as described above in Sections 3.6 and 3.8

As I transcribed the data, I started summarising the main ideas in note form (see Table 5). Following the transcribing of the data, I coded it, using applied thematic analysis. I tried to represent the main themes in the form of thematic maps but as can be seen in Figures 3 and 4, this was rather unwieldy. This made me think of different ways of presenting the data in my main study, and I opted for presenting the analysis of the data in tabular form (see e.g. Table 8 on pp.109-110), or in more simple thematic maps such as

that in Figure 13: Thematic map of resource adaptation on page p.121).

<p>OER reuse:</p> <ul style="list-style-type: none">- Reasons for reusing OER- Most reuse is not made public. Reasons for this.- Reuse in practice:<ul style="list-style-type: none">o Use OER for an idea to create your own resourceo Use OER but make some changes to the resource (to do with design, additional support e.g. language)o Use the same (physical) resource but change the pedagogic intento Use the resource as is and as it was intended <p>Sharing: what, where, why and with whom?</p> <ul style="list-style-type: none">- Sharing resources in LORO: benefits and barriers- Sharing resources in tutor forum with in a course: advantages and disadvantages- Sharing practice in LORO: e.g. through comments on resources- Sharing practice in other ways?- Usefulness (or not) of sharing <p>Creativity:</p> <ul style="list-style-type: none">- Is there a relation between how ALs see the importance of creativity in their job and the sort of reuse they make? i.e. creativity in the production of resources or creativity in the teaching? <p>Community:</p> <ul style="list-style-type: none">- Isolation of ALs- How this impinges on sharing, and on professional reflection and learning- Interest in finding out about the practice of others- Different 'communities': national/regional, language, course <p>Professional knowledge and professional learning:</p> <ul style="list-style-type: none">- Types of knowledge ALs make use of when preparing lessons and when teaching them (subject knowledge, knowledge about the course and the students, technical knowledge, especially about Elluminate, pedagogic knowledge, both in language teaching and in teaching online, emotional/affective knowledge)

Table 5: (Pilot study): Notes taken while transcribing

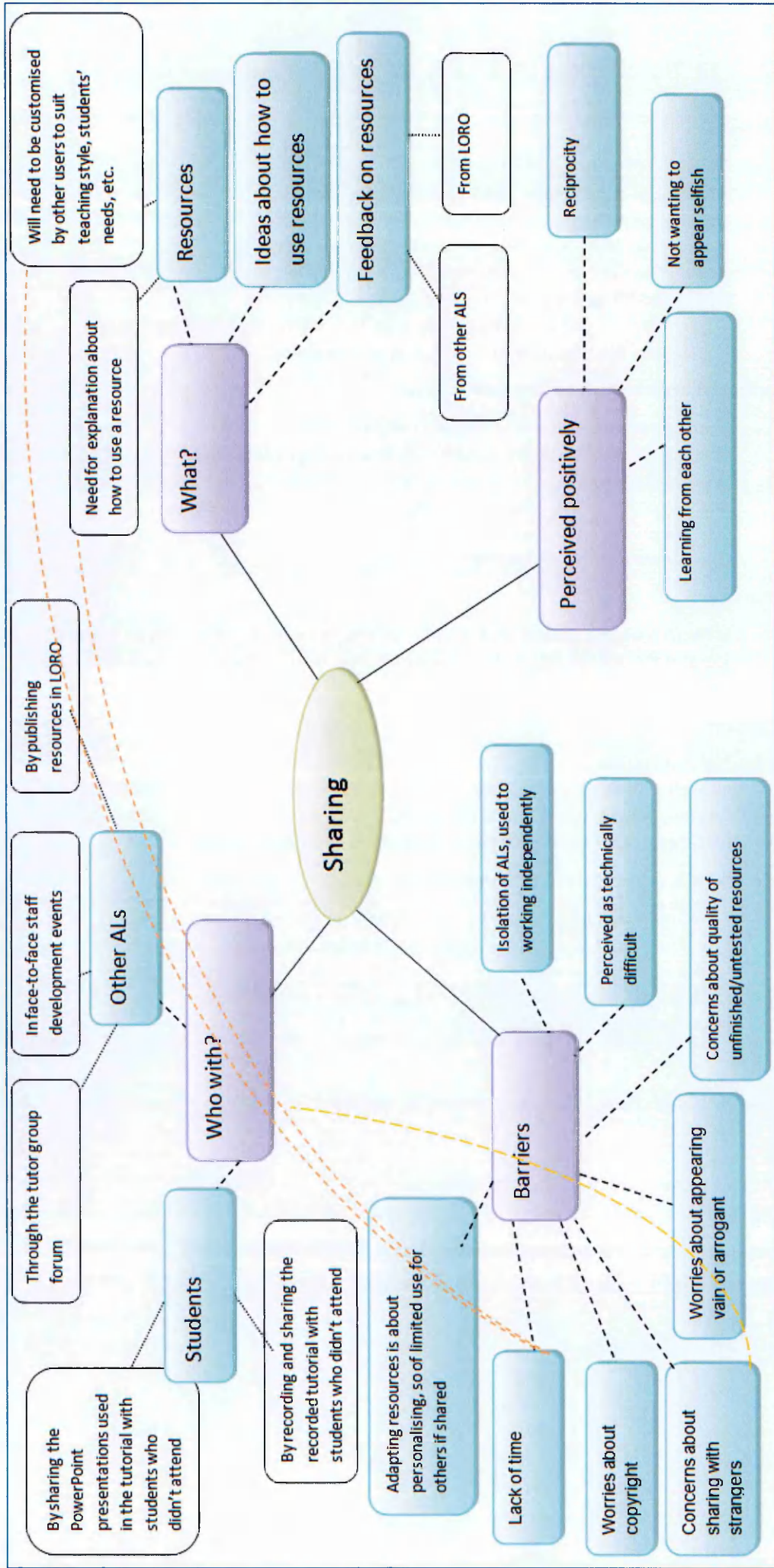


Figure 3 (Pilot study): Thematic map on 'Sharing'

3.9.2 Findings of the pilot study and discussion

In this section, I present and discuss the main findings of the pilot study in two main areas: adapting and sharing OER and issues around professional knowledge.

3.9.2.a Adapting and sharing OER

In terms of adapting and sharing resources, the main finding from the pilot study was that, far from not engaging in reuse, and contrary to the findings in the literature (which are not specific to this discipline), the participants often adapted the OER they used. The ways in which the language teachers reused resources from the repository include:

- getting inspiration from existing resources (sometimes in other languages or at other levels) in order to create new ones;
- making some small changes to the OER to make them more attractive/personalise them (e.g. changes to design, font, photos, colours);
- making some small changes to the OER by adding key language expressions or structures to provide additional support to students.

Sometimes a resource was used without making any physical changes to it, but the pedagogical aim was transformed (e.g. turning an activity to practise a grammar structure into one to practise vocabulary, for instance). Sometimes this was planned, and sometimes it was ‘improvised’ during the lesson, to account for the number of students present, the students’ abilities and needs, the need to change the pace of the lesson, or the teacher’s wish to experiment.

Adaptations of LORO resources included the welcome screen that teachers put up before the tutorials to welcome students as they come in to the Elluminate room, which are resources that, by their nature, are designed to be altered by the user.

Teachers also created completely new resources to fulfil a perceived gap in the LORO materials, or other classroom management and ‘phatic’ resources, such as screens with the lesson outcomes and final screens with good wishes for the Christmas period.

The following chart (Figure 5) summarises the types of resources used.

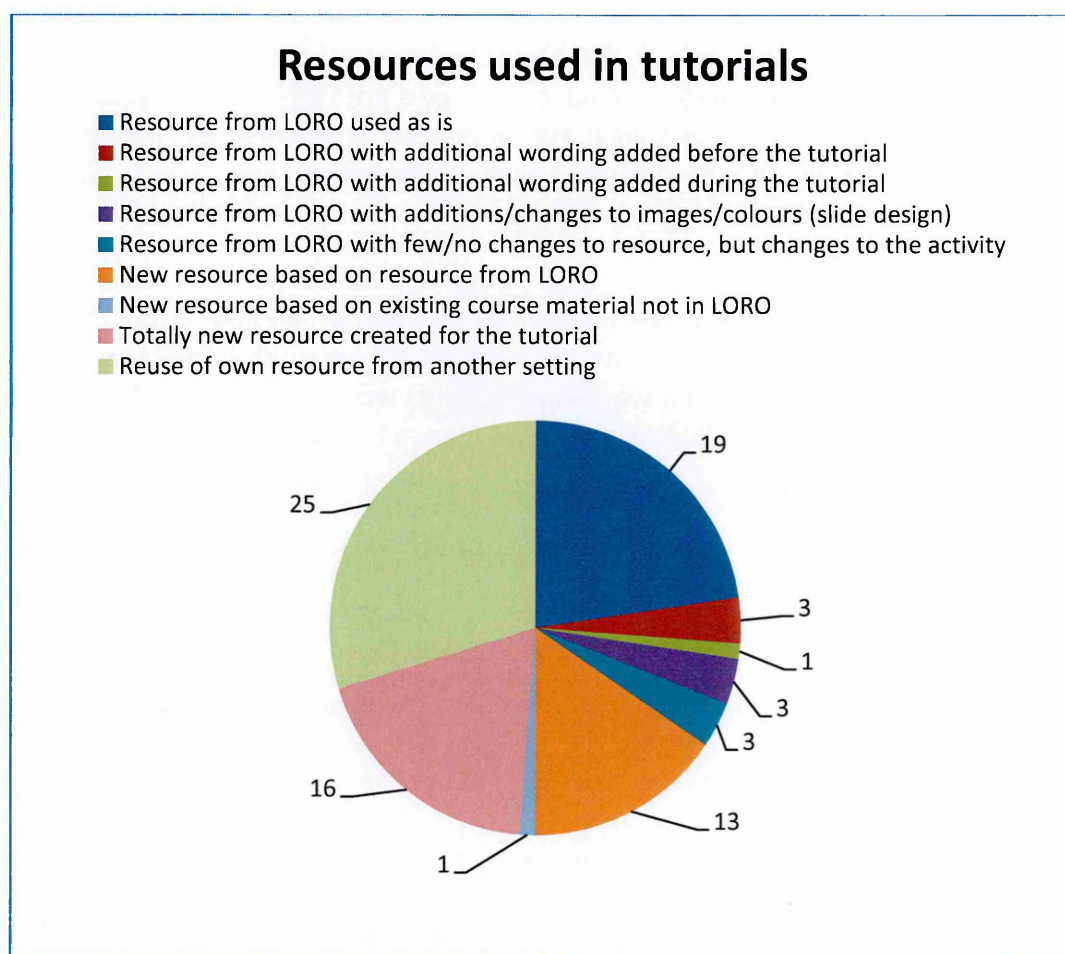


Figure 5 (Pilot study): OER and other resources used in tutorials

Whilst it can be argued that some of the changes to the OER from LORO were fairly minimal, teachers justified changes to the design or the inclusion of additional wording through coherent arguments about online learning and the affordances of

Illuminate. Indeed, through the professional conversations and the observations, some of the teachers' implicit knowledge was elucidated. This finding indicated that the teachers in the study do indeed understand the OER and are able to reuse them effectively, contrary to the claim by Dimitriadis *et al.* (2009) that this might not be the case.

The following explanation by one of the participants about why she always adapts resources is illustrative of the teachers' arguments about the reasons for adapting OER:

PS1: I think it's very good, the idea of sharing, because you've got the resources there, but I think it's better to adapt, or adjust what you've got there, in LORO, [...] and readapt or readjust what has been done according to your own needs... whatever somebody else did or prepared for their class I always had to tweak or change a little bit, even if it was just including the target language on the screen, or even if it were just changing a couple of icons, I always had to touch them a little bit...

TB: Why do you think that is?

PS1: Well, because we all have different groups, we have [students of] different abilities, we know our groups, we know what they need, we get to know our students, we know how they work, we know the level of the group, so you change, you always have to change a little bit, adapt a little bit...

Another finding of the study was that although most language teachers make changes to the resources from the repository, they do not publish their changes in LORO. Although in principle sharing was perceived as a positive thing by participants in the study, the stated barriers to sharing included lack of time, worries about copyright, concerns about sharing with strangers and worries about appearing vain or arrogant in front of colleagues, and echo those in the OER literature (Byskov Lund, 2010). Interestingly, teachers perceived the changes they make to resources as being very personal, to fit with their own teaching styles or tastes, or with their students' needs, and explained that they did not necessarily perceive the resulting resources as being useful to

others, which is one of the reasons they were not published again. After explaining the changes she had made to a resource, one teacher commented:

PS2: I think it works better for me like this [the resource] but I'm not sure it would work better for others like this, they might prefer to keep it more simple, or they might put all these sentences on the text chat. Or they might just do it differently.

However, it is important to understand that not publishing resources in the LORO repository does not mean that the resources are not shared. Several teachers in the study explained that, rather than sharing through LORO, many shared teaching ideas or resources in the tutor forums, so sharing took place in a more intimate setting with closer colleagues. Some teachers also shared their resources with students, by saving all the presentations they had used in class onto a PowerPoint file that they sent to all their students, even those that had not attended the lesson. Some also recorded their class (via screencasting) and sent the link of the recording to their students.

The issue of the isolation of ALs was mentioned a number of times, and this was also felt to impinge on sharing. At the same time, ALs expressed an interest in finding out about the practice of others, and were keen to have opportunities to share resources and practices, for instance by finding out how others used the same resources. During some of the conversations, I pointed out to ALs that a colleague had uploaded a resource she had repurposed, and they were curious to see what she had done. They were also keen to develop opportunities for social learning, highlighting the usefulness of the professional conversations.

3.9.2.b Professional knowledge

The pilot study also revealed that teachers made use of considerable professional knowledge when engaging with OER for their lessons. The types of knowledge teachers

mentioned included subject knowledge, knowledge about the course and the students, technical knowledge, especially about Elluminate, pedagogic knowledge, both in language teaching and in teaching online via an audiographic system, emotional/affective issues, and knowledge of resources in LORO. One of the topics we explored in relation to their role as teachers and to reusing OER vs. making their own resources was the issue of creativity. Some of the teachers saw the creation of resources for their lessons as central to their role as a teacher, whilst others perceived creativity to take place in the act of teaching itself. That might account for differences in whether they made substantial changes to the resources or created new ones, or whether they simply used them more or less as they were, albeit sometimes improvising how they used them in the classroom, although this is not a topic I explored in depth.

3.9.3 Limitations of the pilot study

The pilot study had a number of limitations. First of all, the number of participants was small (eight, or about 8% of the Associate Lecturer body in the Department of Languages). How representative participants are of the whole cohort is an issue, particularly as the selection of participants was done through selective sampling. In the main study, I decided not to use selective sampling, as I was concerned this might skew the results; whilst it might have been useful to use quota or dimensional sampling (Cohen & Manion, 1994), this was not really feasible given other constraints. The other important limitation with the design of the pilot study was that teachers were observed before and after only one tutorial; so, in the main study, I decided to observe teachers before and after two tutorials.

3.9.4 Reflection and lessons learned from the pilot study

Reflecting critically on the pilot study, I felt it was successful in addressing some of the gaps in the literature, notably the need to research how best to foster teachers' reuse of OER (Masterman & Wild, 2011). The research design originated from my interest in peer observation of teaching and reflective practice and was informed by my own position as a researcher doing real world research, concerned with facilitating action, changes and improvements, and influencing policy and practice (Robson, 2011). I was aware of the differences in power relations between me and the ALs in the study, and the issue of reactivity, and tried therefore to minimise this by engaging the ALs in professional conversations. Before starting the pilot study, I was unsure about whether professional conversations would yield sufficiently rich data, but the pilot demonstrated that this was the case.

Several teachers mentioned that they had found the professional conversations to be useful and interesting, and that they encouraged them to reflect on their practice.

One of them explained:

PS3: It's probably prompting more reflection than I would normally do, to be honest, because right now I would be thinking about [assignments] and answering a lot of e-mail queries so, yes, it's probably prompting more reflection and also we are used to working on our own, so prompting more thoughts about sharing with others [...] I think it might be interesting just to share with tutors on the same course, [...] at some point to show what we have done with the resources...

And another said:

PS4: ...You don't have many chances to reflect on what you do, so it's a very good opportunity for me to reflect on what I do... it'll be also interesting to know, without obviously knowing names, what other colleagues think about all this...

This unprompted positive feedback from ALs encouraged me to use this method of data generation again in the main study, and reassured me that I was also addressing the ethical issue of ensuring the research was of some benefit to the participants.

In terms of ethical issues, it became clear when doing the pilot study that if I wanted to use any of their resources published in LORO to illustrate specific issues in the research, this would identify the authors of those particular resources as participants in the study, so I would need to ask permission from any individual whose resources I might want to use in this way.

3.10 Summary

In this chapter, I have explained the methodological considerations of my research and the methods of data generation and analysis, and how the pilot study led to changes for the main study. As mentioned, the research process is much more fluid than I had perhaps anticipated when I first started my doctorate, and the pilot study was a useful point at which to refine my research questions, further survey the literature, and assess the suitability of my methods. So, for instance, the pilot study prompted me to focus my research questions around the OER lifecycle model, so as to ensure they covered the breadth of practices associated with OER engagement. I also expanded the literature review around the theme of professional learning, to better understand issues around the tacit professional knowledge of ALs. The apparent lack of sharing also made me reflect on whether the barriers discussed in the literature were actually telling the full story, and the vulnerability, lack of confidence and isolation expressed by some of the participants drove me to think of other lenses (teacher vulnerability, capabilities approach) through which this lack of engagement with a central open educational practice might be understood. In

the next chapter, I present the findings of the main study, and discuss them against the research questions and the insights from the literature.

Chapter 4: Findings and discussion

In this chapter, I summarise what the main study consisted of, and provide an overview of the resources used by the teachers. I then present the findings and discuss them. Rather than present all the findings together and then move on to the discussion, I have divided the chapter into sections along the different stages of the OER lifecycle, which also mirror my specific research questions. Therefore, I first look at the issue of locating the resources, then at composing, adapting and using them, and finally at sharing. Then, I consider the issue of the tacit professional knowledge that teachers use when engaging with OER, and I finish this chapter by providing a summary.

4.1 The study

As stated in Chapter 3, the participants in my case study were 12 language teachers of French and Spanish for beginners at the UK Open University, and I wanted to investigate if their practices around OER conformed to the OER lifecycle model. Engagement with OER can help transform tacit knowledge into ‘commonly usable knowledge’, and thus contribute to enhancing the quality of teaching and learning (Iiyoshi & Kumar, 2008, p. 435), so I also wanted to find out what tacit knowledge was, as a first step in making it shareable and useable.

My study addresses the lack of ‘real world’ research into OER use, so I designed the research around specific learning events, the preparation of and subsequent reflection on specific language classes that ALs had with their students. I conducted professional conversations with twelve participants (eight teachers of Spanish and four of French, which I refer to as S1 to S8 and F1 to F4 respectively in the data). To ensure the learning events were comparable, I selected ALs who teach on the French and Spanish

beginners' courses at the OU, all of whom were experienced online distance language teachers, and all of whom discussed with me a similar teaching event (i.e. Tutorial 3 and/or 4 in the course).

The data generation took place on Elluminate, the synchronous audiographic conferencing system used by OU ALs. In total, I conducted conversations before and after two tutorials with 10 of the ALs (so four conversation with each), and I met two of the ALs only twice. The data generation took place between December 2012 and February 2013, and each meeting lasted approximately 45 minutes to an hour. The conversations were recorded and transcribed, and the data set also included the resource screens discussed for each tutorial. The data were then analysed using applied thematic analysis, and the coding was done on NVivo9.

4.2 An overview of the resources and their use

Before looking in more detail at how resources are found, composed, adapted, reused, and shared, I will provide an overview of the resources used by the teachers, and focus on those used in the first tutorial I discussed with each one of the ALs.

As shown in Table 6, the teachers used a total of 151 resources between them for the first tutorial discussed. The average was 12.58, and the median was 13.

Teacher	Number (total 151)
F1	6
S1	8
F2	9
S2	10
S3	12
S4	12
S5	13
S6	13
F3	13
S7	15
F4	18
S8	22

Table 6: Number of resources used in the first tutorial discussed

Out of the 151 resources used by the teachers in the first tutorial we discussed, more than 40% came from LORO, just over 30% were created by the individual teacher, and 15.8% of the resources came from other teachers (see Table 7). What this indicates is that teachers do indeed find some of the resources in LORO and, also, that there seems to be some sharing taking place outside of the repository, as teachers reuse each others' resources. In Section 4.5, I provide a more detailed analysis of how these resources are shared.

Provenance of resource	Number (total 151)	% of total
LORO	65	43%
Own resource	48	31.7%
Another Teacher	24	15.8%
Found on the web (online image)	6	3.9%
Course book	5	3.3%
Lyceum	2	1.3%
Other books	1	0.6%

Table 7: Provenance of resources used in the first tutorial discussed¹⁰

¹⁰ Percentages have been rounded up or down, hence they only add up to 99.6

Figure 6, below, shows the same data as Table 7, but in the form of a pie chart.

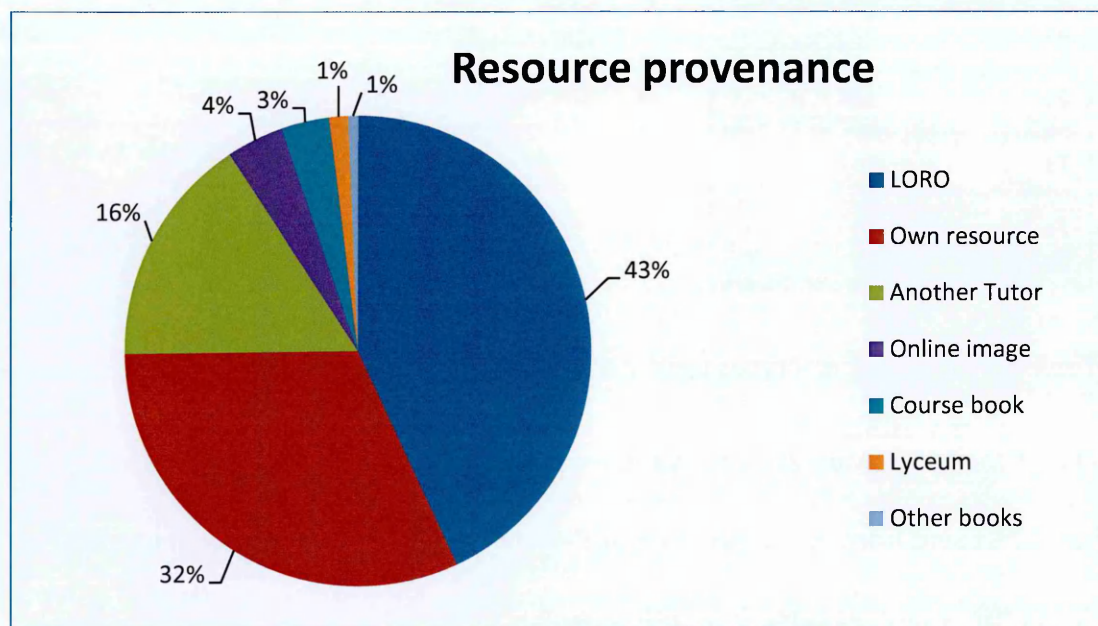
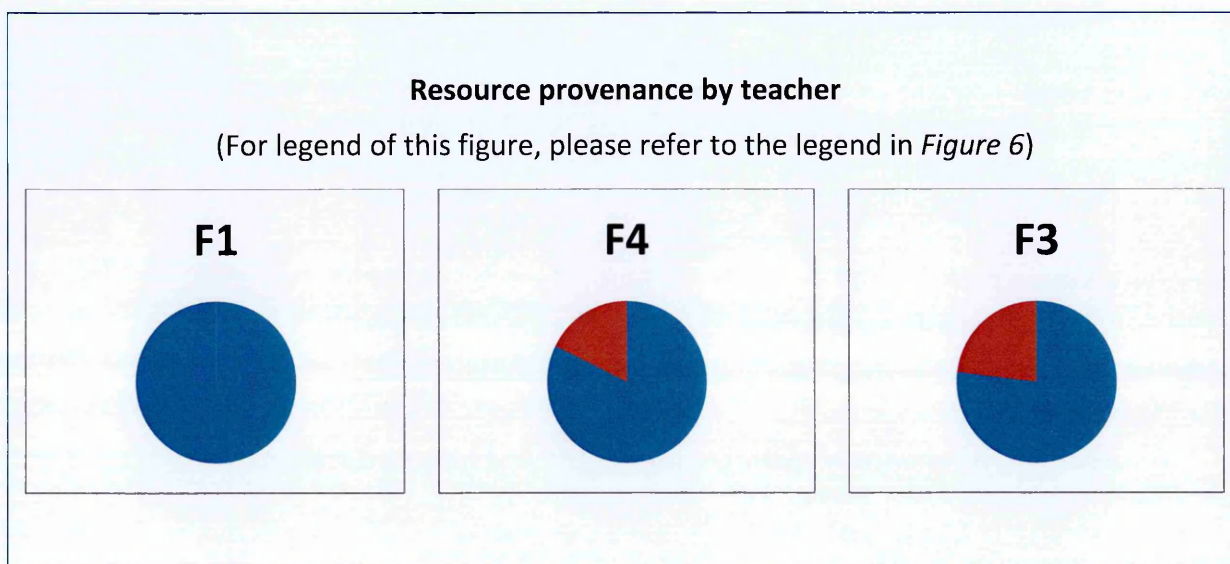


Figure 6: Resource provenance (first tutorial discussed)

Figure 7, below, gives a pie chart for each of the teachers in the study showing the provenance of the resources used in the first tutorials I discussed with each of them.

What the individual pie charts show is the difference in the individual teachers' practices.



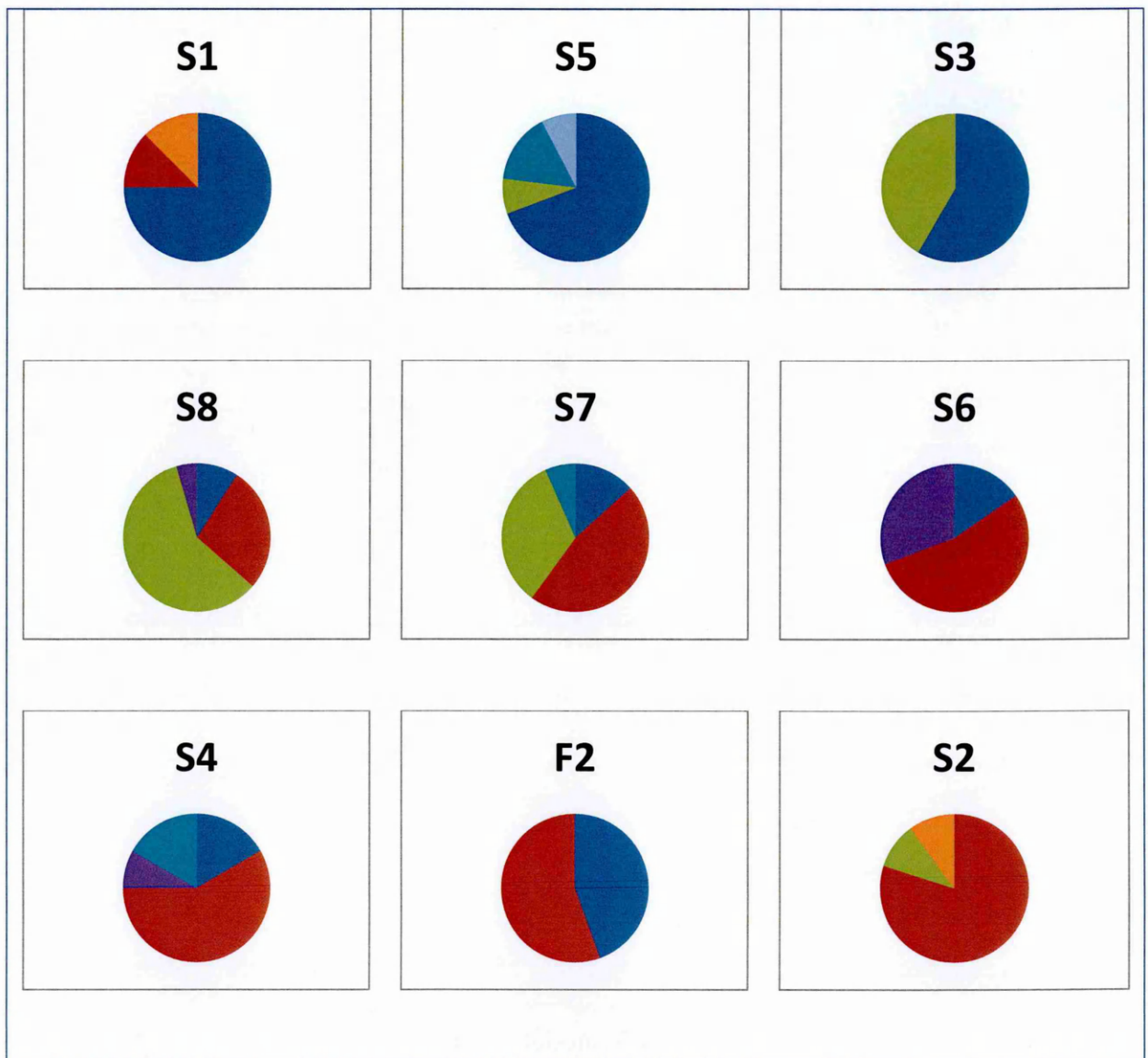


Figure 7: Resource provenance (first tutorial discussed), by teacher

So F1 only used resources from LORO; F4, F3 and S1 used mostly resources from LORO (or Lyceum, in the case of S1), with a few additions of their own; S5 and S3 used resources from LORO or from other sources (other teachers and, in the case of S5, from books); S8 and S7 used mostly their own or other teachers' resources, as well as a few resources from LORO; S6 has a similar profile, but also used images that he found online and, like the remaining three teachers, also used more of his own resources than resources from other provenance. Whereas S4 and F2 used resources they made and those from other sources in more or less the same proportions, S4 sourced his other

materials from LORO, from the course book and online, whereas F2 only sourced them from LORO. Finally, S2 did not use any resources from LORO for this tutorial, making most of the resources herself and reusing one from another teacher, and one from the Lyceum resources originally produced by the course team.

What the data illustrates is that teachers use resources from a variety of sources, mainly from the LORO repository, from other teachers, or ones they make themselves. The data also show that the individual practices of teachers range from using only resources from LORO to using mostly resources made by themselves. However, even the teachers who mostly use their own resources also reuse resources from others, be they from LORO or from other teachers. In the next section, I discuss where and how they find these external resources.

4.3 RQ1: Locating resources

In order to find out whether the practices of the teachers in the study with regard to OER reuse conform to the OER lifecycle model or not, I formulated some specific research questions (see Section 2.6). This section looks at where teachers locate¹¹ the resources they used in their lessons, and in particular, if they come from LORO. It addresses the first phase of the OER cycle, which starts with finding the resource.

4.3.1 Locating resources: findings

The transcripts of the conversations were coded for instances where the teachers referred specifically to the provenance of a particular resource they were using, and all resources were cross-referenced against resources in LORO. As we saw in Section 4.2, for


¹¹ I have used 'locating' rather than 'finding' in this chapter purely for stylistic reasons, as discussing the findings of the section on finding resources sounded odd and confusing.


the first tutorial, out of the 151 resources used by the teachers, 48 were the teachers' own resources, and the remaining were from LORO (65), from another teacher (24) or from other sources (14). This means that 68% of the resources were not produced by the teachers that used them, but had been found. How far this is typical of open educational practices in other contexts is difficult to know, and it might be that the fact that the OU provides teachers with a repository of ready-made resources targeted specifically at the courses the teachers are supporting encourages more reuse of resources produced by others than is the case in other contexts. This would indeed chime with Lane and McAndrew's (2010) assertion that in spite of the OER cycle only having had limited success, there seems to be greater success when users are organised groups rather than individuals. Given the fact that ALs belong to groups of colleagues teaching on the same courses, that the academics responsible for those courses produce tutorial resources that are organised and stored in a repository, and that ALs are clearly directed to the repository when preparing their tutorials, it would be reasonable to assume that the resources in LORO are easily discoverable by ALs, and this might in turn lead to more widespread use.


In the case of materials they did not devise themselves, the teachers identified two main places where they found the resources they used in their tutorial: the LORO repository and the tutor forum, which is for the exclusive use of the teachers on that course, the course leaders and other relevant staff. The course website also includes a section with specific resources for ALs, which includes an introduction to LORO, a link to the repository, and instructions on downloading and using resources from LORO (see Figure 8).

Illuminate tutorial materials

The Illuminate tutorial materials can be accessed via LORO, the Language Open Resources Online collection. In LORO you can also browse tutorial materials for other languages and levels.

 [LORO](#)

 [Instructions for using and downloading Illuminate materials from LORO](#)

 [LORO briefing file](#): The attached document gives you a brief outline about how to get access to LORO and what materials are in LORO for the course.

 [Illuminate and LORO Training WorkspaceURL](#)

This space contains a forum where you can ask questions related to Illuminate or LORO, and a wiki where common problems and solutions are being gathered for reference

Figure 8: Information about LORO in the ALs' section of the website

In Table 8, I have summarised the results of the data analysis relating to locating resources. The responses to the first research question, 'Where do the resources used in the teachers' lessons come from? Do they come from LORO? (Find)' have been categorised and divided into sub-themes. The table also includes the number of instances the response and sub-theme were identified in the data. Illustrative quotes are provided in the last column.

Theme: Locating resources

RQ1: Where do the resources used in the teachers' lessons come from? Do they come from LORO? (Find)

Response	Sub-theme	Instances	Examples:
LORO (24 responses)	OER found in LORO	17	F2: It's called 'Describe Yourself' I think, anyway, yes it was one from LORO. F1: I am actually going to use slides that are on LORO, and I find these quite interesting and relevant to them because it's all about ordering food, and asking for a table and reading a menu, etc. I think it's relevant to everybody.
	OER found in LORO (slight doubt about provenance)	4 (same teacher)	S3: Now where did I get this from? I think this came from LORO.
	OER from LORO (previously saved on the teacher's computer)	3	S5: Yes I have my own [...] folders so I have one for L194... then I have one subfolder for tutorial resources and I have all the whiteboards I downloaded from LORO, I have my own whiteboards here as well, I have some PowerPoints and then [...] I created a new folder for the new presentation so I have [...] a series of whiteboards for the November tutorial which [...] I may be able to use next year, yep. I try to organize things but [...] in the end I keep downloading things and then I have everything organized it's a very ... how you call it? ... It's ... er.. disorganized organization if you want but [...] I know where to find things in the end which is what matters.
LORO/forum? (2 responses)	LORO or forum: Source not sure	2 (same teacher)	S8: Then someone put this either on LORO or I think it was on the forum, and I can't remember who put it on there.
Forum (17 responses)	Forum: uncertainty about authorship?	10	S8: Then we were going to go onto the family and this is also something that someone had put on the forum S3: Yes this is from someone – I don't know if it's from [teacher X], this is from one of the other tutors, I think, this one.
	Forum	1	S8: This is one on the house from the forum as well
	Forum (slight doubt about provenance)	1	S6: I think these actually may well have been borrowed from um... the tutor forum, in fact I think they are
	Forum: named author	5	S7: This is [teacher Z]'s work and [...] she posted this up on the forum...

Course book (5 responses)	Image copied from course book and used for an activity in tutorial	5	S5: Then finally this is from the textbook to practice how to express frequency... I copied this from the <i>Portales</i> textbook: I saw the picture and I thought that this was great and I didn't have to do anything, I just had to copy and paste it. I only had five minutes to do this, so I did it very quickly...
Lyceum resource (1 response)	Lyceum saved in ALs computer	1	S2: No, I didn't go into LORO. I have been in, but I've never actually used anything on there because I've never quite found what I'm looking for. I've not explored it enough and because I already have material on my computer from the Lyceum days ... I've just used that because, you know, they seem to work well so I just stuck with that...

Table 8: Locating resources

4.3.2 Locating resources: discussion

As I explained in Section 4.2, of the resources used in the first tutorial we discussed, more than 40% came from LORO. It seems that teachers in this study did not find it difficult to locate OER from LORO for their tutorials and that, in addition, they found resources in other places, such as in the tutor forum, as well as online.

Several authors have written about the issue of discoverability of OER. As Abeywardena and Chan (2013) point out, although there are large quantities of OER, most people look for academically useful resources only in some of the more popular and larger OER repositories, so that the smaller ones remain more isolated and largely undiscovered. Another issue that hinders the discoverability of OER is the fact that search engines are not available to locate OER distributed around the world (Abeywardena & Chan, 2013). Searching through the various repositories to find what one might need requires so much time and effort that one might as well create one's resources from scratch (Abeywardena & Chan, 2013). Indeed, being able to locate relevant resources quickly and easily was crucial to the participants of Brent *et al.*'s (2012) study into the obstacles to creating and finding OER in social sciences. Brent and colleagues explained that three quarters of the participants used Google searches to locate resources (so not

specifically OER), and only a small percentage used repositories such as Jorum (7%) or Merlot (6%). Participants thought that, when searching in OER repositories, although a high frequency of results was returned, these did not always relate to the search term. The small number of resources in many repositories, and inconsistencies in metadata, were also found to limit the effectiveness of searches, thus also weakening the trust in OER repositories (Brent *et al.*, 2012).

Wenk (2010) considers that the main obstacle to teachers using OER is the difficulty in locating the resources they need in the first place. This is underlined by Yergler (2010), who points out that both educators and publishers consider discovery as a hurdle to adoption. Even when educators find resources, difficulties in adapting them due to format or licensing issues mean they are not easy to publish again and, even when they are, they are in turn not easily discovered by others. Search and discovery of OER lie beneath all of these issues, which we shall consider in more detail in Section 4.5.

The literature on discoverability points to several technical solutions that are beginning to be worked on, such as better search engines for OER (Abeywardena & Chan, 2013). At the same time, others point out that personal recommendation, or more sophisticated recommender systems, as well as systems that enable peer review, are also an important way to increase the reuse of OER by making them more discoverable (Clements & Pawlowski, 2012). These, however, fall outside the scope of this study, although the more general issues raised above should provide a context for the following discussion.

Although after the professional conversations I cross-referenced each resource used against the resources in LORO to establish their provenance, the provenance of each and every resource was not systematically discussed. Out of the 49 specific discussions of

the provenance of a resource, in just under half (24) the resources were attributed to the LORO repository; in one third (17) of the cases, the resources had been created by other teachers and shared through the tutor forum (and none of them, incidentally, were based on LORO resources); in the case of another two, the teacher could not remember if they were from LORO or the forum; most of the rest (5) came from the coursebook. As the provenance of every resource was not discussed systematically, but arose in a more *ad hoc* way in the discussion, it is difficult to make quantitative claims about the location of resources based on the data from the transcripts of the conversation, although the data show that the teachers in the study do find many of the resources they use in their tutorials in the LORO repository.

When considered against the backdrop of the problems of discoverability highlighted in the literature, the results might seem puzzling, as it appears that OU languages ALs are unusual in that they are successful in locating relevant OER. However, in his report on engaging users and producers in OER repositories, Byskov Lund (2010) made a number of points pertinent to this discussion. First of all, he highlighted the fact that, in order to be successful, a repository needs to be actively used, so there needs to be an active community of users. One way of achieving that is to locate an existing community of practice and support it efficiently through the repository (Byskov Lund, 2010, p. 6). The way that LORO was set up conforms with this, in the sense that, although it is an open repository, it is also a repository that caters to a specific, pre-existing group of users, the OU languages ALs. Part of the design of LORO was geared towards making the ALs' use of the repository as simple as possible when looking for resources for a specific course. So, whilst the functionalities of the repository include some of the more generic ones recommended by Byskov Lund (2010), such as simple and advanced

searching and browsing facilities, LORO also includes a prominent link on the homepage, 'Find resources for Open University modules', that directs users to a page where each OU language course is clearly identified, and provides links to the resources for each course (See Figures 9 and 10). Both pages also include clear descriptions of what the repository contains.

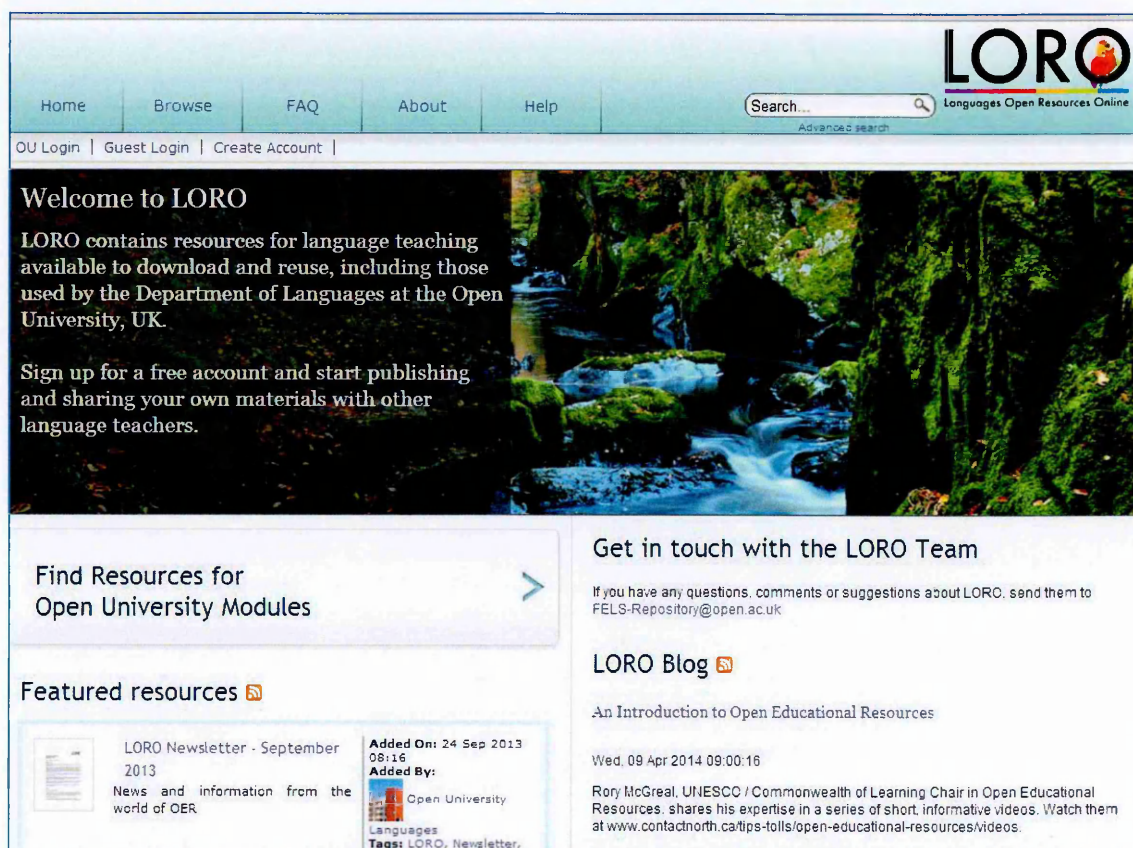


Figure 9: LORO homepage

The screenshot shows the LORO website interface. At the top right is the LORO logo (Languages Open Resources Online) and a search bar. Below the logo are navigation links: Home, Browse, FAQ, About, Help. Below these are links for OU Login, Guest Login, and Create Account. The main content area features a banner for 'Open University Modules' with a background image of a market. The text on the banner reads: 'These are the language courses offered by the Department of Languages at The Open University, UK. Each course collection contains resources produced by The Open University and by teachers who work for The Open University.' Below the banner is a table listing various language courses.

L192 - Beginners' French	L193 - Beginners' German
L194 - Beginners' Spanish	L195 - Beginners' Italian
L196 - Beginners' Welsh	L197 - Beginners' Chinese
L120 - Intermediate French	L130 - Intermediate German
L140 - Intermediate Spanish	L150 - Intermediate Italian
L185 - English for Academic Purposes	L211 - Upper Intermediate French
L203 - Upper Intermediate German	L204 - Upper Intermediate Spanish
L310 - Advanced French	L313 - Advanced German
L314 - Advanced Spanish	LB160 - Professional Communication Skills for Business Studies
LB720 - English Communication Skills for Global Managers	

Figure 10: LORO page with links to resources by course

Again, as recommended by Byskov Lund (2010), each resource in LORO is presented in a resource page (see Figure 11) that enables the user to see a detailed view of the resource, and includes a preview of the different assets included in the resource, as well as the metadata such as tags, resource description, course and unit, licence and permissions, and number of downloads. It enables the user to download the resource, and includes a number of additional features, such as the possibility of commenting publicly on the resource or making notes viewable only to the user, emailing the resource author, and 'liking' the resource. As can be seen from Figure 11, though, these social features are seldom used. It would seem that the basic features in the resource page are

appropriate to the needs of ALs, who are able to locate relevant, appropriate resources from the information provided.

The screenshot shows a LORO (Languages Open Resources Online) resource page. At the top, there is a navigation menu with 'Home', 'Browse', 'FAQ', 'About', and 'Help'. A search bar is located on the right. Below the navigation, there are links for 'OU Login', 'Guest Login', and 'Create Account'. The main heading is 'L192 Unit2 01 Expressing likes and dislikes'. The central content is a circular food vocabulary chart with various food items and their French labels: 'le fromage' (cheese), 'le yaourt' (yogurt), 'les fruits' (fruits), and 'les légumes' (vegetables). To the right of the chart is a sidebar with a 'Description' section stating 'Expressing likes and dislikes, understanding and using food vocabulary, using definite articles'. Below that is the 'Resource details' section, which lists 'Added By: Open University Languages', 'Added On: 27 Sep 2012 17:44', 'Creators: Open University Languages', 'Tags: likes, dislikes, food, definite articles, French', 'Language: English', 'Language: French', 'Course Code: L192', 'Unit: Unité 2', 'Permissions: World', and 'Link: http://loro.open.ac.uk/3128/'. At the bottom of the sidebar is a 'Toolbox' with options like 'Download as zip' and 'Email the uploader'. Below the chart is a file manager interface showing 'Food_vocabulary.png' and other related files. At the bottom of the page, there is a 'Comments & Notes' section with a message: 'You must login to add comments. There are no comments for L192 Unit2 01 Expressing likes and dislikes.'

Figure 11: A LORO resource page

In terms of finding the resources for their tutorials, six of the twelve ALs in the study specifically explained that they had saved the resources onto their computers in previous years, and looked through those when preparing their tutorials – the practice of drawing on their ‘personal collections’ identified by Harley (2008), and which Wiley has defended as the fifth ‘R’ of openness, ‘retain’ (Wiley, 2014). One did exclusively that, and

was even using resources saved from several years ago, when the tutorials were delivered on a different platform:

TB: Did you go into LORO [...], to see whether there was anything else [...]?

SAI: No, I didn't go into LORO. I have been in, but I've never actually used anything on there because I've never quite found what I'm looking for. I've not explored it enough and because I already have material on my computer from the Lyceum days ...I've just used that because, you know, they seem to work well so I just stuck with that. I also use [...] you know, some people put their PowerPoint presentations on the tutor forum and I use those sometimes, adapt them maybe...

The others saved the resources onto their computers, but also went back to LORO to see if there were any new resources available since they had last taught the course the previous year.

Three teachers were hesitant or unsure about the provenance or authorship of the resources they were using – as illustrated by the extract above, most of these had been saved onto their computers without making a note of the source or the author. So for instance, in 10 of the 17 cases where the forum was mentioned as the source, teachers were unsure who the author of the resource was, and in only five was the original author of the resource identified.

From the analysis of the data on where teachers find their resources, it is evident that teachers put together resources they find in LORO and in the forum with resources they create themselves. Four explicitly mentioned this but, from the analysis of the provenance of the resources used by the teachers (Figure 7), it is clear that this is the general practice amongst most of them.

The reasons for this 'mixed economy' varied from teacher to teacher, and even the behaviour of individual teachers changed depending on the context, as can be seen in the following quote:

TB: Do you get your resources from LORO, do you make them yourself, do you get them from anywhere else?

F3: For the old course, I would do a bit of both; I would have a look at what is on LORO, download the resources, and then I would mix and match with my own. I would usually have all the recap tables or references to the course materials on slides that I would design and for the practice activities, if you want, the pictures and everything, I would use LORO. What I find with the new course is, because I'm not familiar with the new course, because the materials produced by the course team are of very good quality, especially the visuals, and I could never get such good visuals myself, or I would have to spend hours looking for them... this year, I do use it a lot. [...] This year, students are a bit, guinea pigs, I'm afraid, and some of the activities are not going to work, some of the activities will be too long. I'm trying to find my feet this year and I think next year, I will have redesigned [them], I will have taken ownership of the LORO resources and blended them in my own tutorial preparation.

To conclude, Gurell (2008) explains that 'finding' is about looking for suitable resources which might be found online, through general site engines, repositories or individual websites, or offline, including resources used in previous years. The teachers in my study seem to engage in this part of the OER lifecycle: they find their resources online, mostly in LORO, in their tutor forum, through general search engines, or offline, (i.e. resources they have created or previously found and saved onto their computers).

Finally, an important issue to bear in mind is that the resources from LORO are OER released under a Creative Commons licence; the resources shared on the forums are not. However, in the analysis of the data about the location of resources, teachers did not seem to make any distinction between them. Whether the licensing under which resources are available makes any difference to how resources are used and adapted, and shared, is something I consider in the following sections.

Having established that the teachers in my study do find a substantial proportions of their resources in LORO, I will now discuss their practice with regards to the next phase of the OER lifecycle.

4.4 RQ2: Composing, adapting and reusing resources

This section considers the second of my specific research questions related to the OER lifecycle, namely how teachers reuse the resources and, more specifically, whether they modify them in any way, i.e. whether they engage in composing, adapting and reusing OER from LORO or other resources.

According to the OER lifecycle, after the resources have been found, they are composed, adapted and (re)used. In this section, I have considered these three stages of the OER lifecycle together. The analysis centres on the adaptation of resources but, as I show in the discussion, adaptation subsumes composing and reusing, as adapted resources are pulled together with others to compose a teaching sequence, and are then (re)used in class.

4.4.1 *Composing, adapting and reusing resources: findings*

In terms of reuse, as illustrated in Table 7 above (p.103), the data show that, in the first tutorial I discussed with each participant, teachers used a total of 151 resources. Out of those, 65 were from LORO, 24 from other teachers, and 2 had been shared by the course developers when synchronous audiovisual tutorials had been conducted in the Lyceum platform. That means that a total of 91 resources out of the 151 used (or 60%) had been created by others, and were therefore being reused by the teachers in the study. It could also be argued that an additional 12 resources, made using images found online, or extracts from the course book or other books, were also examples of reuse, as the teachers were using resources that already existed for a different purpose elsewhere. This would bring the number of reused resources up to 103 (68%). The remaining 48 were the teachers' own resources. Several teachers mentioned that, from year to year, they

slightly adapted these resources they had made, so again, some of these were being adapted and reused by their own creators. Out of the 103 resources that could be considered to involve 'reuse' rather than original creation, teachers specifically discussed changes to 72 of them (or 70%), and these are the ones I want to focus on in this section.

When teachers planned their tutorials, they were all involved in 'composing', in the sense that they all took resources from LORO or from other sources (including other teachers), and all but one (F1) reused resources they had developed previously or created new ones for the lesson, which they organised in a logical, coherent teaching sequence according to the aims of their teaching session. Two of the teachers also engaged in another practice that might also be considered 'composing'. One of them, S1, gave the example of an activity from LORO to practice talking about your daily routine (see Figure 12), which she often used without altering, but which students often found hard because they could not recall the verbs needed or conjugate them fluently enough to do the activity. She added an additional sequence of steps before the activity to revise and practise the verbs in a more controlled way. Another teacher, S7, gave the opposite example of 'composing': composing by selecting only part of an available resource. Resources in LORO often contain a number of screens, each accompanying a different step in the activity. As S7 put it, she sometimes shortens an activity that is too long, selecting 'bits that will be relevant rather than using the whole piece of material which could take [...] quite a while to get through'. I have included 'composing' in the sense of adding or selecting from a sequence of available resources in an activity as one of the forms of adaptation.

¿A qué hora te despiertas?
Me despierto a las seis y media de la mañana

¿A qué hora desayunas?
Desayuno a las siete

¿Qué sueles desayunar?
Suelo desayunar un café con galletas.

Mi rutina

Figure 12: Talking about your routine (from LORO)

The thematic map in Figure 13 summarises the different ways in which teachers adapted resources for the first tutorial we discussed. In terms of instances of changes, Table 9 sums up the adaptations made to resources based on the discussion of the resources used in the first tutorial.

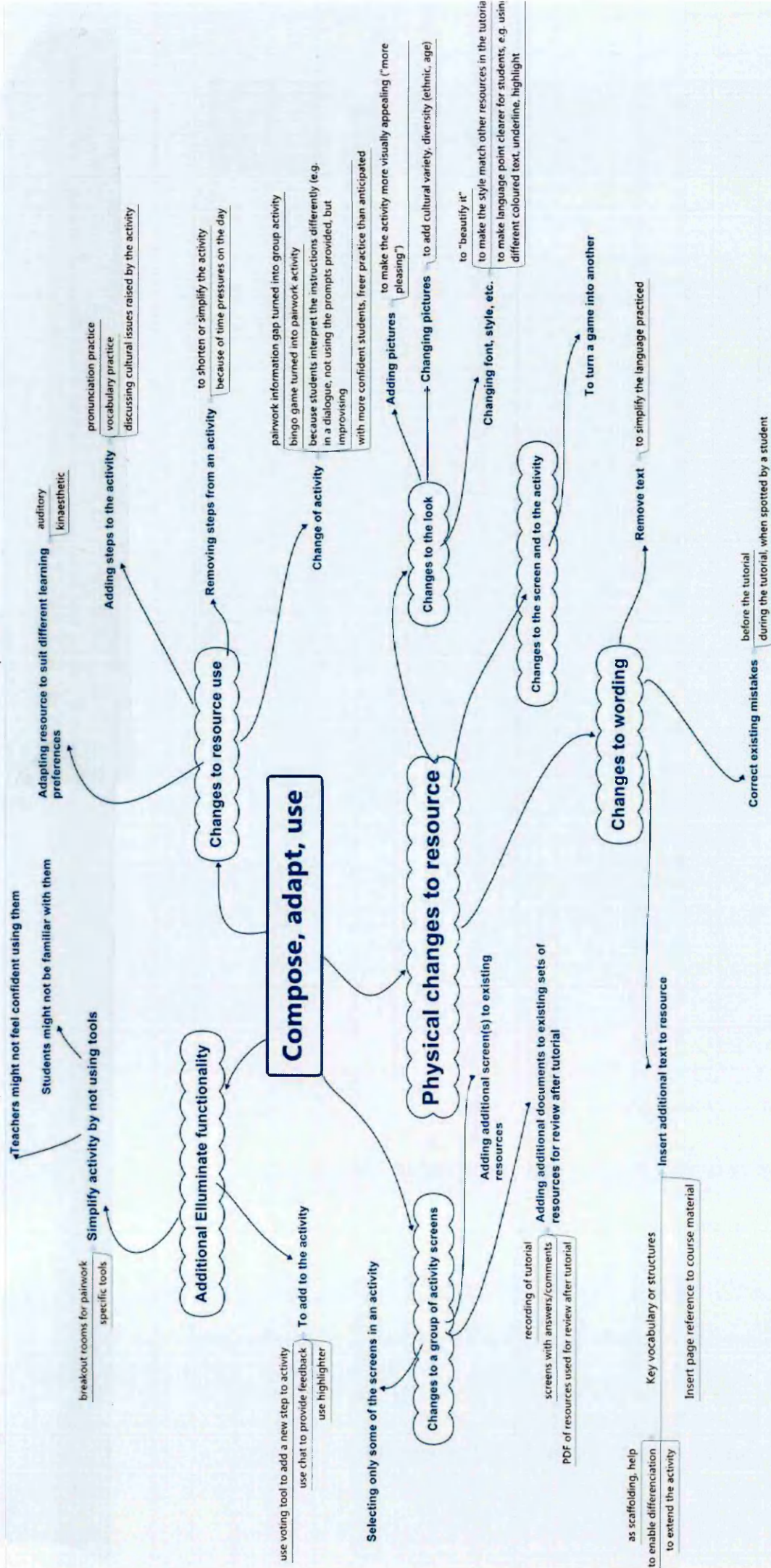


Figure 13: Thematic map of resource adaptation

Theme: Adaptations made to the resources			
RQ2: How do teachers reuse the resources and, more specifically, do they adapt them in any way? (Compose, Adapt, (Re)use)			
Physical changes to resources (i.e. the screens)	34	– Changes to wording	23
		– Changes to the look	9
		– Changes to the screen AND the activity	2
Changes to the use of the resource (but not to the screens)	17	– Adding steps to an activity	9
		– Changing the activity	5
		– Removing steps to an activity	2
		– Adapting the resource to suit different learning preferences	1
Changes to Elluminate tools/functionality used (different use than in the resource description/lesson plan)	11	– Simplify activity by not using tools/functionality described in resource's pedagogical description	5
		– Additional tools used to enhance the activity	3
Changes to a group of screens	10	– Adding resources for review after tutorial	8
		– Adding screens to an existing activity screen group	1
		– Selecting only some of the screens from an activity screen group	1

Table 9: Types of adaptation and number of instances discussed

Teachers seem to adapt resources mostly by either making physical changes to the resource screens, or by adapting the way the way the activity works, which I will now discuss.

4.4.2 Composing, adapting and reusing resources: discussion

In this section, I start by considering the physical changes to the resources I observed in my study (4.4.2.a), and then discuss the changes to the use of resources, so those changes that involve adapting the pedagogical purpose of the resource (4.4.2.b). As I explained in Section 1.4 when discussing the rationale for this study, it has been argued that some of the barriers to adaptation and reuse relate to the fact that teachers might not fully understand the resources, or that they might not have the technical skills to

adapt them. In the final two subsections (4.4.2.c and 4.4.2.d), I discuss these two issues in relation to the findings of my study.

4.4.2.a Physical changes to the resources

As can be seen in Table 9, the most common types of adaptation are those that result in actual physical changes to the resources. Of these, most are changes to the wording in a screen, and in fact, they actually involve the insertion of additional text, usually key vocabulary or grammatical structures as scaffolding or help for less confident students.

For example, Figure 14 shows one of the screens from a LORO resource with the adaptation made by S4. The resource is for an information gap activity, a standard communicative language learning activity, where students in pairs have to ask each other questions. It contains two screens, one for student A and one for student B: students have to ask each other about the opening times of several shops, and reply to the other student's questions with the information on their screen. The activity has been adapted by S4 by adding a text box on the top right-hand corner with some of the key structures students need to do the activity.

instance by incorporating images of people of different ages or ethnic backgrounds in a resource that included some photos of people to be described.

In this category of changes, there were also a small number of more substantial adaptations that involved changes both to the physical resource and to the activity the resource was used for. For instance, S5 developed a resource which he had based on one created by another teacher and shared through the tutor forum. Figure 15, on the next page, shows the original activity (above) and the remixed activity (below).

Although they look very similar, there are a number of important changes. The original resource was a board game to be used in face-to-face settings, although S5 acknowledges that he cannot remember what the original instructions were, exactly. A fairly typical use of this sort of resource is to play a game where students have to throw a die and make a sentence with the verb that is in the square they land on. S5 had used it in face-to-face tutorials in the past, but had also adapted it further for that setting. As he says, because the original activity was in a Word document, 'it is easily modified, so I deleted the verbs, and then I copied them onto a different sheet and cut out the pictures. So on the one hand I had the pictures, and on the other the verbs, and the students had to match them up, so that was a vocabulary activity.' Then as a further step, students had to throw a die and pick a picture, and conjugate the verb in the person that matched the number in the die. So for instance, if the die showed the number two, this would be the second person singular. Rather than a speaking activity with the emphasis on fluency, as in the original, the activity had become much more geared to practising vocabulary and focussing on accuracy of form.

Tablero de los verbos regulares

 Pagar 1	 Comer 2	 Beber 3	 Andar 4
 Leer 5	 Escribir 6	 Comprar 7	 Limpiar 8
 Lavar 9	 Planchar 10	 Cocinar 11	 Subir 12
 Correr 13	 Cantar 14	 Montar en Bici 15	 Trabajar 16
 Escuchar 17	 Estudiar 18	 Montar a caballo 19	 Mirar la tele 20
 Bailar 21	 Pintar 22	 Nadar 23	 Vender 24

 pagar 1	 2	 3	 4	pasear
 5	 6	 comprar 7	 8	limpiar subir cocinar
 9	 10	 11	 12	comer mirar la tele
 correr 13	 14	 15	 16	escuchar estudiar planchar
 17	 18	 19	 20	beber leer escribir lavar cantar

Figure 15: Regular verb practice - original activity (above) and remixed activity (below)

Although S5 had never used the activity on Elluminate, he was keen to try it, so again had made a number of small changes so that it would work in that medium. So student A would say a number, and Student B would drag and drop the correct verb onto the square, and say the verb as they did that. Then, once all the verbs were in the right place, S5 would say the number of a box and a subject pronoun, and students would have to provide the verb in the correct form. As S5 explained, it worked as well as in face-to-face mode, although he had had to get rid of the last row of pictures so it would fit on the Elluminate screen. As he said, again because of the fact that the resource was originally available as a Word document, it was easy to modify it for Elluminate, and did not take him long to do.

Two themes that emerge from these examples of physical adaptations to the resources are to do with size and format of the resource. Some authors have pointed out that the format in which the resources are made available is important for their possible reuse (Baraniuk, 2007; Wenk, 2010; Hassler *et al.*, 2014); so for instance a resource published as a PDF, whilst preserving the formatting, makes it difficult to repurpose for most users, thus making it 'open in theory but closed in practice to editing and reuse' (Baraniuk, 2007). As Hassler *et al.* (2014) explain, format and compatibility issues are also vital to ensure that downloaded resources are useable: all the interviewees in their study of teachers and teacher educators in STEM subjects said that 'they preferred to tailor materials to suit their own purposes and match the needs of their students. [...] A key recommendation [...] was that resources should be provided in formats that permit easy adaptation' (Hassler *et al.*, 2014, p. 17 of 24).

The resources in LORO, and many of those produced and shared by ALs, are in formats that most teachers have access to and that are easy to reversion, such as Word

or PowerPoint. In fact, many resources in LORO are available in a number of different formats precisely to enable adaptation.

As far as size is concerned, Littlejohn (2003) explains that an important issue relating to reusability is the size of the resource:

In general, the smaller or more granular a resource, the greater the possibility of it being reused in another educational context: for example, an individual image is likely to be more readily reused than an entire course (Downes, 2000). However, larger resources usually have greater educational value: it may be less time-consuming for a teacher to reuse a larger resource, such as a learning activity, rather than to construct a course from many small, basic components. Therefore, in terms of resource size, there is often a tension between increasing educational value and maximizing reusability (Littlejohn, 2003).

David Wiley (Wiley, 2004) has highlighted that there is an 'inverse relationship between reusability and pedagogical effectiveness': on the one hand, 'the more context a learning object has, the more (and the more easily) a learner can learn from it' but on the other hand, paradoxically, in order to 'make learning objects maximally reusable, learning objects should contain as little context as possible'. Indeed, he explains that 'pedagogical effectiveness and potential for reuse are completely at odds with each other, unless the end user is permitted to edit the learning object' (Wiley, 2004, n.p.).

In the case of LORO, the resources are small and granular, not so much down to the level of single images, but to the level of single screens that might contain several images and text as part of an activity. At the same time, because they have been developed to fit the educational context in which ALs operate, it could also be argued that the OER in LORO, and the resources developed by ALs and shared in the tutor forum, have considerable educational value to that group of users, and are easy to compose into a sequence of activities for a specific tutorial. They are both pedagogically effective for that context, and easy to reuse.

As F4 pointed out, this can save teachers a lot of time:

F4: It's really great to have [the activities] there, made for you, [...] you don't need to [...] spend an awful lot of time [...] constructing an activity, because doing that, I think, takes an awful lot of time [...] I was really pleased to see that... when... I thought: 'Oh, I've got this group now and I need to see what the book is, where the resources are and so on' and I thought, ah I'm going to have to make up these PowerPoints and these whiteboards and so on, and when I looked at LORO I heaved a sigh of relief because I thought; 'Oh goodness! Thank goodness there are activities there that I can use!', so that was really helpful...

This point was also made by others, such as S6, who pointed out the advantages of using resources from LORO rather than making something similar himself:

TB: [...] In general do you prefer to use your own resources, or resources from LORO?

S6: I use a bit of both, I don't mind... Some things on LORO I think are pretty good, and it's as easy to use that [as it is] to spend time producing something that's basically doing the same job so [...] I tend to use a mixture, really.

Wenk (2010) agrees that resources with coarse granularity, i.e. consisting of fewer, larger components, such as complete courses, are difficult to reuse in other contexts; however, he explains that resources with very fine granularity (of the level of single images, for instance) are not necessarily reused more often. He explains that the level of granularity most appropriate to be reused depends on the resource being created – so, for instance, when creating a whole course, it might be easier to integrate a whole lesson rather than a single image. On the other hand, I would argue that, when developing a small resource, such as the screens for a tutorial, it might be easier to integrate smaller resources together. It would seem that the level of granularity of the resources available in LORO, and of those shared by ALs through the tutor forum, is very well suited to being reused and adapted in the context of an OU tutorial: they are of the right level of granularity to make the integration fairly easy and not too time consuming, whilst still

enabling adaptation to the specific context of the tutorial, which is facilitated by the format of the resources (Word, PowerPoint...).

4.4.2.b Changes to the use of the resource

17 of the 72 instances of adaptation discussed (nearly a quarter), relate to changes in the way the resource is used, rather than in physical changes to the resource itself. In the case of OER in LORO, the resources are usually made up of (1) the screen to be used on Elluminate (as a Whiteboard (.wbd) file or, increasingly, also as a PowerPoint file so that it can be used in face-to-face settings too), and (2) the teaching notes that explain to the teacher how the resource can be used.

Figure 16, on the next page, shows an example of a resource with the teaching notes that accompany it. S5 explained that he had used this resource often in the past and was using it again in his tutorial. Although he starts the activity as suggested to ensure students know the names of the different pieces of furniture in the room, he then deviates from the lesson notes. The lesson notes suggest that students describe where an item of furniture is (*La ventana está al lado de la cama*, The window is next to the bed) or to ask each other where a piece of furniture is (*¿Dónde está la silla?*, Where's the chair?). As S5 explained, in the original activity there is no information gap, therefore, there is little communicative purpose, so he turned this activity into a guessing game:

S5: You describe one thing and then the others listen and try to guess. For example: 'It's between the lamp and the window, underneath the books....' 'That's the bed!' [...] If you do the guessing game it is more interesting... they get to think, and guess what is being described.

As well as changing the main activity related to this resource, S5 then devised a follow-up pronunciation activity, as he noticed that many of the nouns included the sound 'r' (*lámpara, alfrombra, armario, puerta, libros* and so on...).

S5 also explained that with this sort of resource, you could do another type of information gap activity by turning it into a game of 'spot the difference'. However, as he said, 'it implies a bit more work in that you would have to modify the picture in some way [...] But obviously that's more work...' It seems that there is a fine balance between creative reuse and additional effort and, judging by the number of resources that are left untouched but where the activity is changed, versus resources where there are substantial changes to the screens in order to change the activity, it would seem that

Mi habitación

Libro 1 Unidad 2 Punto 2.6

Objectives

- Talking about the interior of a room
- Phrases for indicating position.
- There is/ There are

Modules provided

L194Libro1Unidad2_Mi habitación.wbd

Outline

1 *Mi habitación.* [5 mins] **PLENUM**

Open L194Libro1Unidad2_Mi habitación.wbd.

- (a) Students list objects in the image using *Hay* + indefinite article + object.
If time allows, students state objects that are not there using *No hay* + object.
- (b) Taking turns, each student describes where an item of furniture or a feature of the room is, e.g. *La ventana está al lado de la cama* or *La alfombra está en el centro de la habitación*. Or you can get students to ask each other about each piece of furniture, e.g. *¿Dónde está la silla?*
La silla está al lado del sofá, delante de la mesa.

2 Answer any questions and provide feedback in English. **PLENUM**



Figure 16: *Mi habitación* (My room) – lesson notes and screen from LORO

ALs are more likely to adapt the use, which does not involve too much additional effort, rather than make substantial changes to the screens.

4.4.2.c Understanding the resources

In Chapter 2, I discussed some of the reasons given in the literature for the disappointing level of adoption and adaptation of OER; amongst these is the fact that teachers might not fully understand the resources (Dimitriadis *et al.*, 2009). However, one of the issues that came across very powerfully in the conversations with teachers about how they adapt resources is that mostly they understand the resources very well.

For instance, S6 pointed out that, although he read the activity notes that accompany most screens in LORO when preparing the tutorials, so that he could understand how the resource had been designed, he also internalised that understanding, and did not usually refer to the activity notes during the tutorial. He also pointed out that, as an experienced teacher of both Spanish and English, he was familiar with communicative language teaching methodology and had created many resources over the years, so that he was quite capable of working out how to exploit most resources by simply looking at the screens provided, rather than the instructions.

F3 explained that, although there are many resources available, there is only a limited number of activity types (such as reordering a dialogue, matching words and pictures, gapfills, etc), so that it is easy for both teachers and students to become familiar with how the activities work. Although she pointed out that this might seem a little repetitive, she also explained that the advantage of this methodical approach is that students could build up their skills and their confidence, and that there was a clear progression in the materials.

Several teachers discussed the fact that the resources are fairly versatile, and that it is not difficult to think of ways of exploiting them. In all the tutorials teachers had to make some on-the-spot changes to how they had planned to use the resources because of the numbers of students who attended being fewer than anticipated, because students had technical problems, or for a variety of other reasons. The fact that they were undaunted by this, and simply adjusted to the circumstances, also indicates that they felt confident using the resources, and that they understood how to use them even in changing circumstances. In fact, they seemed quite sanguine about embracing the paradoxes of teacher vulnerability (Kelchtermans, 2009) and being able to engage in thoughtful lesson planning, whilst at the same time preparing for and allowing the unexpected to happen.

In fact, before the tutorial, some ALs were already thinking of different eventualities, and discussed diverse possible uses of the resources they had selected. For instance, F3 explained:

F3: So this one is really open production where people will have to be in smaller groups. Maybe we'll do a chain, depending on the number of people again, where we'll be asking and answering questions about their real or imagined family.

It would seem, then, that the view expressed by Dimitriadis *et al.* (2009) according to which the disappointing level of adoption and adaptation is partly due to teachers not fully understanding the resources does not seem to hold true in my study. That may be because it is a repository of resources that are very closely tailored to the needs of the OU teachers that use them, and that follow a pedagogical approach – communicative language teaching – that is familiar to them, so they understand well the types of activities used in the resources.

4.4.2.d Technical barriers to reuse

Another issue mentioned in the literature about adaptation and reuse is the technical barriers to reuse. Petrides *et al.* (2008) mention lack of technical skills as a reason why contributors to the Connexions repository ceased to contribute. In a study around the development of open courseware at the University of Nottingham, Beggan (2010, p. 18) also noted technical barriers to reuse and concluded that ‘technological barriers can be a very real issue to open publishing and additional resources dedicated to content conversion may be required’. As he explained, anything beyond creating plain text proved problematic. Gurell (2012) maintains that ‘there has been no attempt to systematically measure the degree to which technology is a barrier in OER reuse’ and that ‘if researchers had a better sense of the degree that technical problems are a barrier to reuse, they might better understand the problem of OER reuse itself’ (Gurell, 2012, p. 39).

Although technical issues around OER repositories (such as interoperability or standards) are a developing area in the more technical literature, most fall beyond the scope of my study, which focuses on the pedagogic rather than the technical. However, technical skills, in the sense of the skills needed to make changes to or share the resources, did come up occasionally in the course of the conversations with ALs. For example, F3 showed me a resource from LORO that she wanted to adapt (on the left in Figure 17). The screen in question was one of the first steps in a fairly long activity sequence to practise describing people. Although the LORO resource dealt with both physical and character descriptions, F3 was keen to concentrate only on the former to start with. She deleted the vocabulary items that were no longer necessary from the screen, but was not able to delete a column from the table in a particularly elegant way, and ended up blackening it out (on the right in Figure 17).

visage	yeux	cheveux	taille/corps	caractère	visage	yeux	cheveux	taille/corps			
hypocrite	verts	blonds	frisés	drôle	rond/e	bruns	verts	blonds	frisés	longs	rond/e
bouclés	gros/se	marron	fort/e	longs	amical/e	grand/e	gros/se	marron	noirs	courts	châtains
grand/e	gris	rondelet/te	noirs	courts	mignon/ne	oval	gris	rondelet/te	carré	maigre	bleus
oval	beau	confiant/e	carré	maigre	châtains						
mince	bruns	gentil/e	bleus	sympathique	agressif/agressive						

Figure 17 Describing people - French beginners' original resource and adaptation

As she explained:

F3: So, that's my slight transformation of the slide because I actually tried to draw a table on Elluminate and it was a disaster [laughs], so I thought, I'm not going to spend hours trying to do a table; so I just blacked out one column. You can do very good tables on PowerPoint, but that meant going back and forth between PowerPoint and Elluminate and I thought... Oh! [surprised as TB changes the black column to white]

TB: I was just wondering if you could make it white and then it would merge with the background.

F3: I've tried different things.... I'm not advanced enough, I think.

However, even if F3 did not have the technical skills to make a more professional-looking table, that did not seem to stop her from making the changes that she thought were necessary for pedagogic reasons.

Similarly, this teacher also provided another example of a resource she had created herself, where she also felt let down by her technical skills (Figure 18).

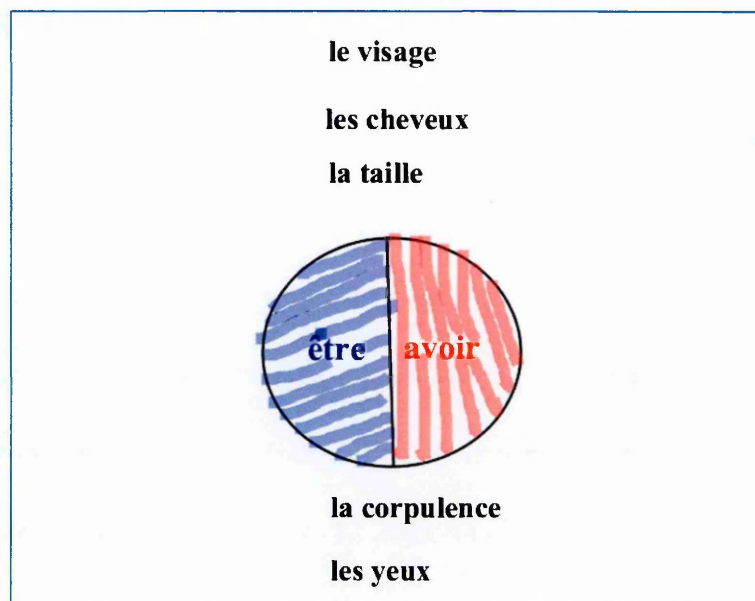


Figure 18: Study skills resource created by a teacher

As F3 explained the resource to me, it was clear that there was a mismatch between her very clear pedagogical understanding of why this activity was needed in the context of her tutorial, and her technical skills to produce a resource for her online lesson:

F3: That is something that I created and as you can see, it looks DIY and homemade. That is about re-organizing, it's about study skills and it's about deciding which verb to use [...] So, people will have to move around the words, like for instance, for hair, it will be 'avoir' and then they will have to make a sentence like, 'He's got brown hair,' or something like that [...] In the book, you've got two pages, one page where you've got a table with 'être' and three pages down the book, you've got another page with a table and all the expressions with 'avoir', but what we need to teach is also recap skills and having an overview of all the structures in one diagram, because that's what they need to do when they prepare for [an assignment]. That's my take on teaching study skills.

TB: [...] You said it's very DIY [...]. Is it something that bothers you?

F3: Yes and no, because obviously you want them to have professional looking materials. I know that when you are a language teacher, especially in face-to-face, you cut out, you've got glue and sellotape and things like that, and you're not bothered about... but obviously you've got the professional looking material from the course team and then you've got my own. Like, I'd like to be able to draw circles and partition them and have two different colours but I've got no idea how to do that on Elluminate,

because you can draw either a filled-up circle or a blank one that you can fill in with one colour, but not two.

What F3's resources show is that, whilst she might not have the technical skills to adapt or create more technically sophisticated resources, this does not seem to prevent her from adopting 'DIY' solutions that are good enough. It seems that the imperative to fulfil her pedagogic aims is more important than the technical constraints that her lack of technical skills impose on her. However, because her technical skills are not sufficient for her to produce resources that look professional enough, F3 explained that she did not feel confident about uploading her resources to the repository. This is something we will return to in the next section, when we consider the issue of sharing.

Finally, there was another example of a technical issue that hindered some of the teachers. In LORO there are a number of information gap pairwork activities, which are very common in communicative language teaching. When done in Elluminate, they involve sending students in pairs into break-out rooms, where they each have to look at a different screen. Although six teachers specifically mentioned activities which involved sending students to break-out rooms, three said that they did not feel confident to do that in the context of an information gap pairwork activity, and explained that they were adapting the activity so that it did not need such complex technical arrangements. S2, for instance, explained:

S2: Again this would have normally been a student A student B exercise, but since this is an online one I will do it this way [as a plenary activity]. I would have done the other way had been a face-to-face tutorial.

So, whereas this is a technical issue, it is really an issue of the skills to deal with the functionality of Elluminate, rather than not understanding the way the resources work or not having the technical skills to adapt them. In fact, as illustrated by S2's comment, those same teachers were perfectly happy to do information gap pairwork activities in face-to-

face settings, or to adapt the resource or the way it was used so as to circumvent their technical worries about the Elluminate functionality. What these examples suggest is that technical issues are not a barrier to reuse *per se*; they might be a barrier to sharing, but that is something I shall explore in the following section.

4.5 RQ3: Sharing

Research Question 3 was designed to try to understand the teachers' engagement with the OER lifecycle practice of sharing, that is, whether they shared the resources they make or adapt. In this section, I discuss the findings relating to this research question.

4.5.1 Sharing: findings

The transcripts of the professional conversations were coded for instances where the teachers referred to sharing, whether it was sharing with other teachers or students, or to not sharing, and the reasons for that. Table 10, below, shows the responses to research question 3: *Do teachers share resources?* The results have been divided into negative and positive responses, and further categorised into sub-themes, with illustrative quotes. The most significant result is that no teacher mentioned sharing any of the resources through the LORO repository. The analysis also shows that most teachers do not share with other teachers at the OU, and those that do share, do so through the tutor forum. Teachers gave a number of reasons for this. At the same time, teachers explained that in face-to-face settings, such as other universities or colleges where they also work, they share resources with colleagues in the staffroom. They also share resources with their students at the OU before or after the tutorial (including with those who do not attend). As can be seen in the discussion, there were also several instances where teachers expressed the view that sharing is a practice they value.

Theme: Sharing

RQ3: Do teachers share the resources they make or adapt? (Share)

Response	Sub-theme	Instances (and n. of teachers)	Examples
No	Lack of time	10 (6)	S1: I think it's probably just time um... there is just no time
	Lack of confidence	7 (3)	S2: I've been too shy.[laughs] TB: Why is that? You are not the only one who says that actually. S2: I don't know, I think it's just lack of confidence. It is daft, I've done this for so long now. [...] I think, from my point of view, is purely that I feel a little bit naked. F3: I don't feel confident about uploading my resources on LORO. I am very grateful for tutors who are but I don't feel confident [...] uploading on the repository of resources, I find it very daunting.
	Might seem arrogant	1 (1)	F2: It's a funny thing isn't it, if you sort of contact colleagues and say: 'Look I did this! Do you want to have a go with it?' It sounds a little bit arrogant, doesn't it? 'This is a good idea, use it' sort of thing... It's a difficult conversation to have, perhaps.
	Technical knowledge and skills	1 (1)	F3: I think if I felt more confident, technically, in my resources, then, yeah, I would like to share if that could help, because I've used resources created by other people and they've really helped and they've really helped my students, they've really helped me, so, if I could do that for them, that would be returning a favour service. At the moment, I lack the confidence I think.
	Copyright	2 (2)	S8: I only contributed one thing [to LORO in the past] and the reason was, I wasn't sure about the copyright side
	Not a priority	1 (3)	S5: Well, I have to be honest with you, not usually, no, it's not because I am um... selfish or anything it's just er... I don't know it's er... maybe I should you know er... it's something that I don't just you know. The thing is I prepare something on whiteboard I use it in the tutorial and then I just er... I just completely forget about it you know, I forget about sharing but you know er... actually you know it would be ... S5: The tutorial finishes at nine in the evening and I am just tired and want to finish, turn off the computer and just go down to watch some TV... and just forget about Elluminate and LORO [laughs]
	Not part of the job	2 (1, + 1 reporting on other ALs)	F1: I don't see it as part of my job really, to put resources there.

	Permanence of material published online	1 (1)	S2: I think it's because you feel a bit exposed, when it's up there, that's it. It's not like a passing comment in a conversation where people can forget it but when it's, there it's there.
	Distance (working in isolation)	5 (4)	S6: Whether it is the fact that obviously the people that I share within work, I know, and I know well, and we worked together every day. Whereas people on the O.U. I don't know the majority of them and I don't work with them every day, so whether that is another issue, I don't know. [...] I think the reluctance to share is the fact that you... almost have a virtual situation... and you are not sitting in a staffroom with people, and I think that does make a difference... it does for me...
	No place to share	5 (5)	F2: I could email people things, but it's I'm not sure if there's a sort of a specific forum or means of communication that we could do that with... I think it's a nice idea....
	Lack of feedback	1 (1)	F1: because I don't get feedback as well [laughs]... It would be good for the person who puts activities there to have feedback.
	Not sure how useful it would be to others	6 (3)	S1: (talking about an improvement she's made to a resource) I don't know, I think probably they'd realise themselves and I don't feel that that is anything so important that I would say [...] It is such a small detail that it helps me but, probably... everybody is very experienced! S8: (talking about a resource he's developed)... [I'm not sure] whether it is worth it [i.e. sharing it] because most people probably already have something that this that they use.
	Not been asked to share	2 (2)	S6: If someone asked me, I would be very happy to share with them
Yes	With students (preparation documents, recording or tutorial, post-tutorial notes and resources)	11 (7)	F4: Right ok. Um... I put this on the forum [...] so that they could have it, you know? TB: Oh did you? F4: Yes afterwards so that they could... [...] if somebody had actually missed the session then, you know, it was there for next time.
	In face-to-face-settings (when sharing a staffroom, or at staff development events)	11 (5)	S6: Absolutely! Yes, very much so yes in that setting we share everything, yes. F3: when I used to teach in [...], we would share, we had big folders with resources, lesson plans, and we would swap and share and we even had meetings for swapping materials...

Via the tutor forum	3 (2 + 1 reporting on other ALs)	<p>TB: Why is it that you don't share them in LORO? Why do you share them in the forum?</p> <p>S4: I think it's because the forum is far more user friendly, so, if you like, it's quicker to actually upload something and write a comment and see replies from people. Sometimes, for example, it's quite good, because you get feedback from people. Sometimes it might be, I don't know, I have done a spelling mistake, or have I forgot an accent somewhere and people might say, 'Oh, I just realized, on the slide such and such [...] you had such and such'. It's quite good because then you sort of get feedback from your peers as well, and with LORO, the problem that you have is they haven't got that. I think that's, perhaps, why I use the tutor forum more because, I suppose in a way, you also value your peer's feedback and with LORO, you are not going to get that.</p>
When mentoring or training colleagues	3 (2)	<p>F3: I am mentoring one of my colleagues [...] So, we've been discussing tutorials: face to face and Elluminate. We've been sharing resources, discussing, and she got access to my tutor group forums so that she can read my messages to my students, or if I send my tutorial notes to my students.</p> <p>TB: That's very interesting. So, you do share!</p> <p>F3: Yes, yes.</p> <p>TB: And do you give each other feedback then on the sorts of things that you share?</p> <p>F3: Yes, we do. I also act as her FLA (foreign language assistant) and so I do use her resources when she's teaching in the face to face tutorials.</p>
When it's part of a specific staff development event (peer observation; collaborative development of resources...)	4 (4)	<p>F3: I did it [shared a resource] when we did the peer observation project and some people really liked it because they thought, 'Oh yeah, that's quite good, I should do that with my students.' So, that's the only opportunity I've had but I haven't done it with my L192 colleagues.</p>

Table 10: Sharing resources

4.5.2 Sharing: discussion

The main finding as far as sharing is concerned is that none of the teachers shared any of the resources they created or adapted for these lessons via LORO, the OER repository. On the homepage, LORO makes the possibility of sharing resources explicit: 'Sign up for a free account and start publishing and sharing your own materials with other language teachers' (see Figure 9). OU ALs do not even have to create their own accounts, as they can sign up automatically with their OU account. The LORO help section also gives

simple instructions about how to upload resources onto LORO, and the online training available to all teachers at the time this study was carried out, which aimed to familiarize them with the new platform, Elluminate, also included training in how to use LORO. In addition, since LORO was set up, there has been a number of training events and staff development projects around collaborative production of materials in LORO. It would seem that if teachers do not share through LORO, it is not because they are not aware that this is a possibility, or that there are not opportunities to learn how to do it. Five of the ALs did in fact upload resources to LORO before or after the data generation for my study, and three of them did so as part of some of the staff development projects around collaborative production of OER.

Only two ALs reported sharing their resources back with the AL community through the tutor forum. On the other hand, ALs are appreciative of colleagues who share (S3: 'Yes its very nice of these people to share them, because it all takes time, doesn't it, to create these slides'), and four of them explained that they are not averse to sharing with colleagues in principle, as the following examples illustrate:

F2: I'm not averse to it, you know... it sounds like I'm keeping everything to myself! I do like sharing resources...

TB: When you make your own resources, do you share them with your colleagues at all?

S5: Well, I have to be honest with you, not usually, no, it's not because I am selfish or anything...

There have been a number of studies on the barriers and enablers of OER production and reuse (Byskov Lund, 2010; Windle *et al.*, 2010; McGill *et al.*, 2012; Pegler, 2012; Petrides *et al.*, 2008; Clements & Pawlowski, 2012). In these studies, the main barriers for reuse are identified as users not having the time, skills or confidence needed

to engage in reuse (Windle *et al.*, 2010), or not finding resources that suit the needs, or that are of good enough quality to be (re)used (Clements & Pawlowski, 2012). Pegler (2012, p. 1 of 18) has argued that the main factors related to reuse of OER are: (1) technical ('the technical or technological systems or processes supporting reuse, including licensing and rights issues'); (2) quality ('the way in which sharers or users may establish or interpret the quality of one resource or reuse service relative to another'); and (3) motivation ('the purpose or motive underlying engagement with the activity and the conditions that this may suggest'). According to Pegler, motivation, which 'represents the factors which make the individual, group, or organisation, wish to engage with reuse as an activity, or wish to use a specific resource', has attracted little attention, partly because it is 'under the control of the individual and is difficult to measure' (Pegler, 2012, p. 7).

As can be seen from the above summary of the literature, OER sharing and reuse are often discussed together. However, in what follows I have tried to disentangle the issues specifically relating to sharing, which are also often discussed in terms of barriers vs. enablers and drivers. They range from the macro, through the meso and down to the micro factors (Pegler, 2011).

Thus at a macro level, reasons for sharing include the idea that 'sharing is a good thing' (Hylén, 2006; OECD, 2007; Rolfe, 2012), or that education itself is 'first and foremost, an enterprise of sharing' and that 'sharing is the sole means by which education is effected' (Wiley & Green, 2012, p. 82). At that broader level too, the emergence of social networking sites and a culture of sharing user-generated content on the one hand (McGill *et al.*, 2008), and the emergence of open licensing and its application in

educational contexts on the other (Nikoi & Armellini, 2012), can be considered two of the main macro enablers of sharing.

At a meso level, drivers for sharing OER include the enhancement of an institution's reputation, marketing and public relations (Hylén, 2006; OECD, 2007; Nikoi & Armellini, 2012; Rolfe, 2012) and the improvement of teaching and learning and student satisfaction at an institutional level (Hylén, 2006; Nikoi & Armellini, 2012). Sharing OER can also contribute to promoting social justice and social inclusion from an institutional perspective (Nikoi & Armellini, 2012). Barriers include the possibility that sharing resources might undermine the uniqueness of a specific university's offering, or that it might not be reciprocal, putting institutions that share in a potentially vulnerable position (Nikoi & Armellini, 2012), and problems with copyright and IPR of institutional knowledge (Clements & Pawlowski, 2012; Rolfe, 2012; Hassler *et al.*, 2014). From a more practical point of view, lack of institutional IT support has also been identified as a barrier to sharing (Rolfe, 2012).

At a micro level, the barriers, enablers and drivers perhaps become more relevant to the discussion of sharing resources in the specific context of this study. The main barriers identified in the literature at the level of the individual are:

- lack of skills (Windle *et al.*, 2010);
- undermining the uniqueness of one's individual teaching (Bates *et al.*, 2007);
- fear of criticism (Wenk, 2010);
- lack of reward (Wenk, 2010);
- lack of time (Rolfe, 2012; Windle *et al.*, 2010);
- lack of confidence in the quality of one's materials (Bates *et al.*, 2007; Windle *et al.*, 2010).

The copyright issues highlighted above also impact at the micro level on the sharing practices of individuals.

Similarly, enablers to sharing at a micro level also include open licences. Other enablers are one's confidence in subject knowledge and teaching skills (Masterman *et al.*, 2011).

The main drivers for teachers sharing resources identified in the literature are:

- personal satisfaction (Wenk, 2010);
- increased reputation (Hylén, 2006; Wenk, 2010; Rolfe, 2012; van Acker *et al.*, 2013);
- reward in the form of altruism and reciprocity (van Acker *et al.*, 2013).

The barriers to OER production and reuse identified by Windle *et al.* (2010), namely lack of time, skills or confidence, seem to encompass some the reasons why the teachers in my study did not engage in sharing, and echo those reported in the initial survey conducted for the LORO environmental scanning (see Section 1.2). Indeed, the teachers mentioned lack of time, lack of confidence, and technical issues (including technical skills and issues around copyright). Some of the other reasons for not sharing also echo the reasons identified by others in the literature: the concern about feeling exposed by publishing resources in a seemingly so permanent and public space as an open repository, or even the fear of appearing arrogant mentioned by one of the teachers in my study seem similar to Wenk's (2010) fear of criticism. In my study, a number of responses might be particular to teachers working in the context of a distributed university such as the OU. Five teachers mentioned not really having a place to share. This is odd, as the repository and the tutor forum are two distinct possibilities at their disposal, but this is clearly their perception, and contrasts with the references to sharing in face-to-face settings, whether this might be in a fairly *ad hoc* way in the

staffroom, or in a more organised way at staff development events. Four of the teachers mentioned distance and working in isolation as a barrier to sharing; one mentioned the lack of feedback; and three the fact that they were not sure how useful sharing their resources would be to others. These barriers all seem to relate to the fact that OU ALs do not know each other very well, so there is a certain reticence or even shyness to sharing with people who are practically strangers, and this might relate to the issue of trust. Clements and Pawlowski (2012) define trust in the context of reuse as 'teachers being able to rely on certain OER through relying on individuals who created them or recommended them, or to rely on the organizations that these individuals belong to' (Clements & Pawlowski, 2012, p. 7). For them, 'trust facilitates reuse of OER', especially when it comes to searching and evaluating the resources (Clements & Pawlowski, 2012, p. 12). Whilst I agree that trust in resources, organizations, and technologies might be particularly important when locating and evaluating OER, I would also argue that trust, in the sense of managing the risks of not knowing the others one might be sharing with, is particularly important in the sharing phase of the OER cycle.

Another important issue is the question of copyright and open licensing. Whilst this has been described as both a barrier (when copyright restricts use, adaptation and subsequent sharing) and an enabler to sharing (when open licenses allow all of those things to happen), I noticed that copyright and open licenses were hardly ever mentioned by the teachers in my study. Indeed, only two teachers mentioned that they might not be able to share resources they had made or found because of copyright. All the resources in LORO are available under a Creative Commons licences, so this is clearly not an issue when sharing resources adapted from those in LORO. However, in the case of resources shared by ALs through the tutor forum, these are not released under open licences, and yet teachers do not seem to make any distinction between the two types of resources,

and seem happy to use, adapt and share (e.g. with their students) open licensed materials from LORO and copyrighted materials from the tutor forum or other sources in equal measure and irrespective of the licence, almost as if the notion of 'fair use' applied to them.

In spite of the many negative responses in relation to whether they shared their resources, teachers often said that they did share their resources in other contexts. So for instance, whilst they were reluctant to publish their resources in a public repository such as LORO, they were much more willing to share their resources with students before and/or after the lesson (including with students who had not attended). Those who also worked or had worked in institutions where there was a physical staffroom shared their resources with colleagues. Some also said that they were more willing to share via the tutor forum, and four mentioned that they shared resources with colleagues they mentored, or in the context of training others or staff development events. What these results seem to indicate is that the barriers to sharing that teachers mention to justify the fact that they do not share their resources through LORO or other online means seem to disappear when the sharing context changes. So teachers are willing to spend time sharing their resources with students or with colleagues face-to-face, and technical issues or lack of confidence do not seem to be a barrier in those contexts. As noted by Pegler (2012), the issue of what motivates teachers to share seems indeed to be an important one in understanding the OER lifecycle.

So far in this chapter I have considered the ways in which the teachers in this study engage with OER, and the extent to which this engagement follows the OER cycle. Although issues about the professional knowledge of teachers have already been

mentioned in the discussion above, I will now deal with this aspect of the research in more detail.

4.6 RQ4: Professional knowledge

As I explained in Section 1.4, the second aim of my research was to understand the (often tacit) professional knowledge used by teachers when engaging with OER, as it has been argued (Iiyoshi & Kumar, 2008) that the open educational practices involved, such as repurposing and sharing resources, can help transform tacit knowledge into 'commonly usable knowledge', and thus contribute to enhancing the quality of teaching and learning. I wanted to find out what cognitive, affective and systemic knowledge, skills and competences (Tait, 2000; Baumann et al., 2008) teachers drew on, as making these explicit is a first step towards being able to share them, and therefore use them towards enhancing practice and teaching quality. I have presented these in three separate tables in the next section.

4.6.1 Professional knowledge: findings

The transcripts of the conversations with the participants were analysed for evidence of professional knowledge, and the key themes are summarised in Table 11. A second key theme that emerged from the data was the issue of the affective support for students that teachers incorporated into their teaching, summarised in Table 12.

Theme: Knowledge used by teachers when preparing tutorials

RQ4: What tacit professional knowledge do teachers draw on when working with OER?

Themes	Instances	Number of ALs
Communicative language teaching pedagogy and resources	12	5
Language/linguistics and how to teach it	11	7
Eluminate functionality and how to use it for teaching	11	7
What students have covered in previous tutorials, of what they need more practice with	10	6
The course, the course calendar, and where students are at	9	8
Their own experience of teaching the course in previous years	9	6
Having been a language student themselves	6	4
Teaching in other contexts	6	4
The resources in LORO	4	4
Technical issues about how to make/adapt resources on Eluminate	4	3
The students	3	2
Their long teaching experience	2	2

Table 11: Knowledge used when preparing tutorials

Theme: Affective issues relating to teaching mentioned by ALs

RQ4: What tacit professional knowledge do teachers draw on when working with OER?

Themes	Instances	Number of ALs
Boost the students confidence and reassure them	16	9
Cater for different students' needs	9	6
Make tutorials/activities fun	5	4
Build a sense of community amongst students	5	5
Keep students engaged	3	3
Help and advice to those that have fallen behind	3	3
Build up confidence with Eluminate	2	2
Find out how students are doing	1	1
Be responsive to students' mood (e.g. if they are getting tired)	1	1

Table 12: Affective issues

As can be seen from some of the themes in the two tables above, some of the cognitive and affective knowledge, skills and competences deployed by teachers overlap with systemic issues, such as providing technical support and development of ICT skills and confidence with Elluminate, or being *au fait* with the specific details of the course structure, and of the resources and systems available for supporting students.

Finally, another theme that emerged from the conversations was the flexibility that teachers demonstrate in their planning of the tutorials, when they make contingency plans to deal with different eventualities. The main themes are illustrated in Table 13.

Theme: Contingency plans/spontaneous changes			
RQ4: What tacit professional knowledge do teachers draw on when working with OER?			
Themes		Instances	Number of ALs
Students	Depending on numbers attending, nature of the group, students' confidence and ability	30	9
Activities	More planned than needed (in case there is time left at the end, in case students need additional help or more practice)	21	10
	Depending on how an activity is going	5	4
	Flexibility, responding to students ("going off at a tangent", "thinking on your feet")	4	4
Time	Run out of time, activity takes less time than planned, difficult to estimate timing of activity	15	7
Technical issues	Set up/use break out room if needed	9	6
	Technical problems on the day (student mike not working, uploading the wrong slide, functionality)	4	4

Table 13: Contingency plans/spontaneous changes

4.6.2 Professional knowledge: discussion

The data shows that teachers made use of their cognitive, affective and systemic knowledge, skills and competences during all the phases of their engagement with the OER lifecycle.

4.6.2.a Locating

When locating and selecting resources for their tutorial, teachers used their cognitive knowledge, such as their knowledge of language and linguistics and how to teach it, and their knowledge of what students had already covered or needed more help with. They drew on their own experience of teaching in other contexts, and from having taught the course in previous years. They also used their knowledge of the course materials and the resources in LORO, and of their students.

The following example shows the cognitive, pedagogic knowledge that one of the teachers deploys when selecting resources from LORO:

TB: How do you decide which activities to use from LORO?

S5: Since the aim of the tutorial is just to enable students to use Spanish, to use the language, the main selling point for me is: is that activity going to be useful in terms of communication? Can I exploit it, can I adapt it, can I enlarge it, you know? So that's the main thing. This one, you can do... some vocabulary, the prepositions, describing things... you can do a follow-up activity maybe on pronunciation maybe if there is a particular sound.... the most important thing is that the students can use the language meaningfully with the resources.

In terms of understanding affective issues, when selecting resources teachers tried to cater for different students' needs, to find activities that would make tutorials fun, and to build a sense of community amongst students.

For instance, when looking for activities to use in her tutorial, S1 explained that sometimes she worried that her lessons are not good fun:

S1: You know we practice what we have to practice, and sometimes I try to think of how could this be made a bit more good fun, a bit more a bit of a game, which is perhaps the thing that I'm less confident with [...] sometimes I fear I'm a bit too academic and I have to I try to do something sometimes a bit more fun, more like games.

From a systemic point of view, when discussing their selection of resources, teachers demonstrated their understanding of the Elluminate functionality, the function of LORO, and of the course calendar, the aims and objectives of the course, and their role in student support.

As I will now explain, in terms of composing, adapting and reusing resources, teachers also demonstrated their cognitive, affective and systemic knowledge, skills and competences.

4.6.2.b Composing, adapting and reusing resources

When composing a teaching sequence, teachers use their pedagogical knowledge of language teaching and learning methodology to produce a sequence of activities that follows the traditional communicative approach of moving from more controlled to freer practice in a lesson. They also use their understanding of affective issues, for instance by introducing a fairly simple activity after a particularly challenging sequence, so that students have time to relax and build up their confidence again before the next sequence. In terms of systemic issues, they use their technical skills to organise the resources in the most appropriate sequence, by adding, removing or adapting screens.

For instance, when organising his slides, S6 gave them all a uniform look in terms of headings, design and font used. He explained why this was important:

S6: I like things to be well presented, organised, and everything looking the same – consistent. [...] I think it helps the students to feel more comfortable because everything is in order and it possibly [makes them feel more] secure.

He went on to explain that when using Elluminate it was important to get students to feel secure and comfortable using the system.

When adapting a resource before the session, teachers again make use of their pedagogical knowledge (for instance to extend an activity from its original intended purpose to fulfil another need they have identified, as shown in Section 4.4). They also engage with affective issues, for instance by adding key phrases to a resource in order to provide affective support for their student:

S2: It's quite early on [...] so their confidence is not as great in general; so that's why I do that. I think it's more like a comfort blanket for them, in fact, that's the idea.

Similarly, when adapting a resource, teachers are clear about systemic issues, especially related to ICT, that they need to draw on, such as the technical issues using a resource might entail (for instance, whether a resource needs to be used in a break-out room in pairs or whether it can be done in plenary).

When reusing resources during the tutorial, ALs also have to be able to respond to different and changing situations. They do this partly because of the contingency plans they have built into their lesson, as the following example suggests:

F2: If I can... you know, if numbers allow and so on, I will group the students depending on their confidence and ability for this because [...] some are really quite well ahead and they could get a lot out of this and have a lot of fun with it and, if there's a weaker student or a quieter student, I will go and join that group and work with them.

At times, they use their cognitive, affective and systemic knowledge together with their ability to reflect 'in action' (Schön, 1983) and their resilience in situations of vulnerability. For instance, they may have planned a group activity and only one student attends, or a student might have sound problems and only be able to intervene in writing through the chat box, or the students attending might be able to cope with the activities

better than anticipated. In these situations teachers need to adapt their resources and their approach 'on the hoof', as the following example illustrates. F1 explains why she made some changes to the planned activity during the lesson:

TB: These changes... was it just with the fact that you had those particular students in the group and you decided to do it like that during the lesson, or had you already thought of this variation of the activity beforehand?

F1: No, I didn't think about this beforehand [...]. It also depends on how confident the students are with the original dialogue, then, we expand a little bit more, make it more relevant to them, make it more personal. I think it makes it more enjoyable as well.

When composing their tutorial, and after they had used the resources with their students, several teachers explained that they engage in reflection, either when preparing a lesson plan, and/or by making notes during or after the lesson, and/or by saving the resources they have adapted for future reference, all of which help them when preparing their lessons next time they teach the course.

4.6.2.c Sharing

Although, as I have explained in Section 4.5, teachers did not usually share the resources they had developed or adapted with colleagues, they certainly shared them with students. This practice again demonstrates their cognitive knowledge (the importance of reviewing and recapping in language learning), their awareness of affective issues (by supporting students who were not able to attend the tutorial, for instance), and of systems (the technical skills to record and share Elluminate tutorials with students, or to adapt and save resources into PDF, which can be shared on the tutor group forum).

4.7 Summary

In this chapter, I first described and discussed the main findings of my study. I provided an overview of the resources used by the teachers in the study and I then

presented and discussed the specific findings about the teachers' engagement with OER in relation to the phases of the OER lifecycle. The findings revealed that teachers did indeed find many of the resources they use in LORO, although they also found others elsewhere. I reported that teachers also compose, adapt and reuse resources, and discussed the many type of changes they make to the resources. I discussed the issue of sharing, and concluded that, although teachers do not share resources through the repository, they do share them with students and with other teachers they know well. The study has demonstrated that teachers do engage with the practices included in the OER lifecycle, but that sharing does not occur publicly through the repository. Finally, I reported on the tacit professional knowledge that teachers use when engaging with OER, showing that they engage with cognitive, affective and systemic knowledge, skills and competences, and that this tacit knowledge can be made explicit, a first step towards making it shareable and widely useable.

Chapter 5: Conclusions

Having considered the findings of my study and discussed them in detail in Chapter 4, I now draw some conclusions from my research. After explaining the limitations of my study, I report on how the study has provided answers to the research questions, and draw some conceptual conclusions, especially around the issue of the invisibility of some OER practices and the implications for research, and around issues of policy and practice. I explain the way in which my study has contributed to knowledge in this field, and reflect on the potential of a capabilities approach as a frame to understand teachers' engagement with OER. I then discuss the research I want to go on to undertake, and conclude with some reflective remarks on the process of studying for my doctorate.

5.1 Limitations of the study

In this study, there were a number of limitations. The numbers of participants, twelve (eight Spanish and four French) represented 16% out of a total of the 72 Spanish and French teachers teaching on the beginners modules. Whether the participants of my study constituted a representative sample is open to question. They were, after all, self-selected, and therefore probably more interested than most in OER or in their own professional development. The case itself in a case study, however, is made up of the data generated in interaction with those particular individuals, and in that sense, the large amount of rich data generated, and the thick descriptions (Geertz, 1973) provided, will help the reader 'to understand the processes, cultures, decision-making, and so on, within the research site. The findings and, in turn, the validity, will rest on these descriptions' (The Open University, 2013b, n.p.). In terms of the selection of the places, times and individuals where the data was generated, I had to make a judgement about

whether generating data from teachers teaching at the same level and in similar languages, and at a similar time during academic year, would be more or less representative than selecting participants from all the different courses, at different times in the academic year. As explained in Section 3.5, I decided for this particular study to include a more homogenous group, but further research could also be done on teachers using OER in courses at different levels.

Whilst representativeness and the minimising of selection bias is particularly important in experimental research, it is also important to put it in perspective: Thomas (2013) argues that extending the notion that a sample has to be a representative when using non-experimental research is not always appropriate, or indeed possible. For instance, a non-probabilistic sample such as one based on snow-balled sampling, where a respondent tells the researcher where they might find another respondent, who in turn puts them in touch with a third, and so on, might be appropriate in some settings. In fact, Thomas goes as far as asserting that 'interpretative researchers sometimes seem to think that they need to parrot the language of experimentalists', and feels that not only is this unnecessary (in particular in relation to sampling), but it also 'leads to misunderstanding about the nature of interpretative research' (Thomas, 2013, p. 138).

In terms of reliability, or 'the extent to which a research instrument such as a test will give the same results on different occasions', Thomas (2013) also believes this is not necessarily appropriate in interpretivist research. Whilst it is important to be consistent in the way the data is generated and gathered during the research project, it is also the case that in this sort of research, knowledge is seen as being situated, the researcher takes an active role in interpreting the data, and their positionality will affect the interpretation –

so in a way, for Thomas 'reliability is [...] irrelevant in interpretative research' (Thomas, 2013, p. 139).

Although some researchers argue that 'a piece of interpretative research has value and completeness in itself' (Thomas, 2013, p. 146), and that it has integrity and does not need any further verification, this does not mean that there should be no triangulation. Indeed, Thomas (2013) explains that the researcher's critical awareness should indeed prompt them to seek other viewpoints or analytical methods to explain or corroborate a particular finding. In that sense, the data provided by the analytics tools used in LORO can be used to triangulate some of the finding – such as the provenance of an OER as stated by a participant. Similarly, although the samples were slightly different, the findings of the main study can also be triangulated against the findings of the pilot study.

Burton (2000) also reminds us that a criticism regularly levelled at case studies in social research is the question of representativeness, 'which raises the question of the extent to which the research findings can be generalized to a wider population beyond the case study' (Burton, 2000, p. 15) . This criticism can be addressed by strategies such as conducting multiple case studies. If I had conducted case studies of all the teachers of all the language at all the levels that are represented in LORO, this might indeed have resulted in evidence that was more compelling and robust, but would not have been very practical considering the time and resource limitations available. Burton also points out that case studies can be defended on philosophical grounds:

The principal use of case studies is to test theoretical propositions – the relationship of the case study findings to theory is of primary importance – not comment about the generalizability to populations and universe. Case studies are about making analytical generalizations and not about making statistical inference. To attempt to make statistical generalizations from case studies is inappropriate and uses a research design in a way for which it was not intended (Burton, 2000, p. 15 of 17).

Finally, as I explained above, in the main study I observed teachers before and after two tutorials, rather than just one, as I had done in the pilot study. Although this went some way to provide some triangulation about how typical the behaviour observed might be across more than one instance, in order to begin to understand the changing nature of OEP, a longitudinal study might need to be conducted, as the adoption of new practices takes time.

5.2 Answers to the research questions

To my knowledge there are no case studies investigating whether OER users follow any or all of the steps in the OER cycle, and my research has provided evidence that the practices of the individual teachers in my study do indeed broadly follow the steps of the OER cycle.

Indeed, the study has shown that teachers look for resources in preparation for their tutorials; the LORO repository is the main place where they find them, although they also use resources they have designed themselves, and resources from other teachers that are shared through the tutor forum on the module websites. The teachers in the study also engage in composing, adapting and using the resources they find. Changes to resources include physical changes to the resources (e.g. changing to the wording) and changes to the way the resources are used, amongst others. In terms of sharing of resources, the study has shown that teachers do not share their resources through the repository, although some do share them through the tutor forums, or with other teachers in the context of mentoring or staff development, and many share them with their students after the tutorial (by recording of the tutorial or reversioning the resources for those students that were not there, for instance). The teachers in this study do

appreciate tutors that share, and some also share resources in other contexts where they work face-to-face with other teachers.

In terms of the professional knowledge that teachers use when working with OER, the study has elicited the often tacit range of cognitive, affective and systemic knowledge, skills and competences that teachers use when engaging in locating, composing, adapting, reusing and sharing the resources, and found that they make contingency plans before the lessons in case of unforeseen circumstances, or adapt the resources or the way they use them during the lesson, therefore demonstrating reflection and flexibility in dealing with the inherent vulnerability of teaching.

The study has also shown the variety in the teachers' practices. Indeed the ALs' practices ranged from using only resources from the repository to much more 'mixed economies' where resources from the repository were combined with own resources and resources from others. Moreover, it has also revealed that individual teachers' practices are not fixed, and appear to change depending on external circumstances and over time.

5.3 Conceptual conclusions

When stating my research questions (Section 2.6), I highlighted that there is a general consensus about the low level of adoption of OER (Dimitriadis *et al.*, 2009; Wiley, 2009a; Abeywardena, 2012), and that Wiley (2009c) specifically seemed concerned about the lack of reuse, which he called the 'dirty secret' of OER.

Although this is a small case study, the present research has demonstrated that, in this specific context, there is adoption of OER, and that teachers adapt and reuse the resources from LORO. This seems to dispel Wiley's fear that there is little or no reuse of

OER (Wiley, 2009c), and to support the argument that reuse and adaptation take place in other places which are not necessarily visible to researchers, an argument which Wiley denigrates (Wiley, 2009a). The current research has shown that reuse and adaptation amongst the teachers in this case study happen regularly: over 60% of the resources used by the teachers in the first tutorial we discussed came from LORO or from other teachers, and were thus reused, and of those, most were adapted in some way. It is true, however, that when it comes to sharing the repurposed resources, none of the teachers in my study did this through LORO, the OER repository, and only two reported sharing their resources through the tutor forum. Most did, however, share their resources in other ways with their students or with colleagues in the context of staff development events or mentoring. What this seems to indicate is that sharing, like reuse, does indeed take place, but that it happens in 'other places', away from the public eye of OER repositories and the wider community.

The above findings from my study inform two conceptual conclusions that I would like to discuss in detail. The first deals with the issue of the invisibility of some of the OER practices and relates to research methods and methodology; the second relates to issues of policy and practice.

5.3.1 Invisibility of OER practices and implications for research

After the initial funding of large OER collections (such as Connexions, OpenLearn or MIT's Open Courseware), the success of the OER movement is now being evaluated to determine the best avenues for further funding and support. In the 2013 *White Paper: Open Educational Resources - Breaking the Lockbox on Education* (The William and Flora Hewlett Foundation, 2013), the Hewlett Foundation, one of the main philanthropic funders of the OER movement and an influential player in the OER movement, stresses

the importance of defining and continually refining a set of outcome-focused metrics and targets that it will use to evaluate the success of the OER movement. The Hewlett Foundation expects that, by 2015, 'the field will have developed metrics of effectiveness and will have a better understanding of how to improve the quality of OER' (The William and Flora Hewlett Foundation, 2013, p. 27). With this aim in mind, they propose strengthening the data collection infrastructure in order to track and report progress, building on previous work using Google Analytics.

Thomas *et al.* (2012) define tracking as 'techniques to ascertain what use and reuse has been made of open educational resources by people after they have been released. The emphasis is on tracking what has happened to a resource: how many times it has been viewed or downloaded, whether it has been copied to another server, whether derivatives have been made' (Thomas *et al.*, 2012, p. 68). They remind us that tracking is important because it provides funders with evidence that their funding is fulfilling a useful, demonstrable need, and exhort OER creators and publishers to be ready to respond to such requests for evidence.

Groom (2013), in *A guide to open educational resources*, commissioned by Jisc, also highlights the benefits of tracking the reuse of OER and measuring their impact through Google Analytics, which has become the main analytics software tool used by UKOER projects. The recommendations for successful monitoring and evaluation include 'analysing web statistics, monitoring comments about the resources, and embedding tracking information within the material' (Groom 2013, n.p.).

The Hewlett Foundation has a US-focus for much of its OER work, and their aim is to track in-classroom adoption, as well as other key factors that lead to OER adoption such as supply, demand and policy, all of which are central to understanding the OER

ecosystem. Although they acknowledge that there might be other ways ‘to capture learning outcome data as opposed to just web analytics data’, the emphasis is on robust, automated data collection and feedback processes (The William and Flora Hewlett Foundation, 2013, p. 25). Thomas *et al.* (2012) warn, however, that tracking ‘can be something of a double-edged sword, as it may equally show that resources are not being used and that the time and effort spent clearing rights so that they could be edited freely was of little value’ (Thomas *et al.*, 2012, p. 68). Groom (2013), on the other hand, cautions that monitoring usage through such analytics tools is not straightforward, because it cannot track if resources are circulated or adapted outside the collection in which they are first published. My research has shown that this is indeed what happens in the context of my case study; analytics can only tell part of the story, but do not, as yet, enable the tracking of resources once they have left a repository, or their lifecycle of reuse, adaptation, and sharing beyond the confines of the repository, so this sort of adaptation and sharing thus becomes invisible to the current tracking mechanisms, and therefore to most researchers, funders and policymakers.

The research design of my study was innovative in OER/OEP research, in that it used professional conversations around the use of specific resources for particular teaching sessions. The research method enabled me to focus on discussing specific instances of reuse and understand the teachers’ tacit professional knowledge around resource selection, adaptation, reuse and sharing. Through the research design, the study has provided evidence of these practices that might remain invisible if undertaking purely quantitative tracking of the resources available through the repository.

There are clear implications for research that derive from this study. Indeed, if the success of the OER movement is measured by the amount of visible (and trackable) reuse,

adaptation and sharing, then it will appear as though the existing OER repositories are not fulfilling their promise. It is important, therefore, that OER research does not rely exclusively on quantitative methodologies and methods that rely on the visible, trackable and measurable evidence available through analytics, but that qualitative case studies such as this one, which provide a more nuanced view of the OER ecosystem, are also routinely carried out and the evidence they provide is taken into account when devising policy or establishing future funding streams. As explained in Section 5.1, such studies would benefit from involving larger samples to provide more representativeness, or other means of triangulating the findings.

5.3.2 Policy and practice

The Hewlett Foundation's goal is to achieve a 'healthy, self-sustaining OER ecosystem marked by strong teacher usage and engagement, fuelled by a supply of high-quality materials held to common standards, and supported by a friendly policy environment' (The William and Flora Hewlett Foundation, 2013, p. 28). The Hewlett white paper (2013) is concerned with achieving mainstream adoption of OER by promoting supportive policy development, as well as by tracking demand and supply factors. Demand factors include improving teacher awareness of and engagement with OER, and supply factors involve the continual improvement of the supply base, so that OER are perceived as being of quality, and are easily discoverable, easy to use, and cover the major academic subjects.

The Hewlett Foundation proposes to work on a number of incentives to increase the adoption and production of OER, including the promotion of policies that favour applying open licenses to content that is publicly funded, and policies that include OER and OEP in teacher education and professional development programmes. This top-down

approach is concerned with macro and meso level policies and systems that, eventually, will trickle down to the micro level. So for instance, they discuss licensing of content created by educators, which they consider one of the main policy barriers that currently hamper wide scale OER adoption and production by governments and institutions. Their view is that it is only when educational policymakers (such as the state boards of education in the US) issue specific guidance for the application of open licences to the resources created by teachers, that educators will 'graduate from informal sharing of content with colleagues to widespread digital distribution of OER' (The William and Flora Hewlett Foundation, 2013, p. 22).

As I have outlined in my study, there is a large body of literature about the drivers, enablers and barriers in OER reuse. Some of the reasons that have been put forward in the literature to explain the lack of engagement with OER that has been observed amongst teachers include issues around not understanding the resources (Dimitriadis *et al.* (2009), lacking the necessary skills to make informed choices about technology (Conole, 2010), and lacking the technical skills to repurpose OER (Abeywardena, 2012).

My study has shown that teachers understand the resources they use, and are able to adapt them to better suit their specific context. This seems to be backed by a recent Jisc report on their OER programme, which states that 'academics feel confident in judging content and view it as a core competency' (Groom 2013, n.p.). However, as I have already explained, the fact that teachers understand the resources and are able to reuse them does not mean that they share their reversioned resources again publicly.

Groom (2013), reviewing the research carried out as part of the Jisc OER programme, explains that there are a number of attributes that characterise the sort of teacher who is likely to be engaged in the OER movement. Such a teacher:

- sees teaching as (among other things) helping students to become active independent learners
- has a collaborative outlook
- sees value in combining their own teaching materials with relevant materials from other sources
- is confident in their teaching skills and their command of subject matter
- has a readiness to develop their professional practice both from engaging from other people's resources and obtaining feedback on the resources they have shared with others (Groom 2013, n.p.).

I would argue that the teachers in my study share many of those characteristics, if not all, and yet they are not fully engaged in the OER movement, because they do not share their reversioned resources with others publicly. The questions that I am left with, as a researcher and as a practitioner, is whether anything should be done about it, and if so, what.

What seems to be in evidence in the literature about lack of engagement in OER is that the lack of engagement is often mediated through the lens of a deficit model: if teachers do not engage in OER reuse, adaptation and sharing, it is due to a lack, a deficiency that can be addressed through further development, whether it be staff development activities to improve the teachers' understanding of OER, or through the development of better technical solutions (such as better metadata, easier uploading mechanisms to enable sharing, or more social media features in the OER repositories).

The Hewlett Foundation's emphasis on improving policies and systems, and their belief that this will eventually result in teachers 'graduating' from informal sharing with colleagues to public sharing of OER (The William and Flora Hewlett Foundation, 2013, p. 22), also seems to indicate that they view current practice as being somewhat deficient, or at least not as fully developed as it could be, since public sharing is implicitly considered as being more desirable than informal, more private sharing.

Although the behaviour of the teachers in my study might be considered somehow 'deficient' in that they did not republish their resources in LORO or share them with other teachers on the forums, they did explain that they shared them with students, and with teachers they mentored, for instance. So they did actually possess the technical skills, the collaborative outlook and the confidence needed to share in those contexts. The assumption behind most of the OER cycles seems to be that the resources will be shared again publicly – Gurell (2008), for instance, refers to sharing as making a resource 'available for the open education community to re-use and begin the life cycle again'. Santally's (2011) OER cycle is different, in that it acknowledges that the publishing and delivery phase need not occur exclusively in an open platform, and that OER might be made available through a closed Virtual Learning Environment, for instance. This is indeed what happens in the practices of the teachers in my study: it seems that the OER cycle is a much more complex ecosystem than that indicated in Gurell's 2008 model, or perhaps that the OER cycle interacts with other ecosystems, such as those of the teaching contexts in which teachers operate (institutional systems, such as the VLE forums, or the communities they feel part of, or not, within the institution, for instance). So it might be that we need to re-evaluate the notion of sharing, and accept that it does not necessarily have to occur in the same place where the resources are found. It might also be that we need to examine more closely the notion of the community with whom the resources are being shared. The open education community that Gurell (2008) refers to is not one that any of the teachers in my study mentioned. It is true that several of the teachers in my study referred to feelings of isolation, one of the conditions of vulnerability (Kelchtermans, 2009) that the teachers acknowledged; so it might be that they do not share through LORO because they do not feel there is a community to share with.

This brings me back to the issue of professional learning, and the different learning models I discussed in the literature review (Section 2.5). First of all, the teachers in my study indicated that the professional development events provided for them by the university rarely offered them the opportunities to really discuss issues that mattered to them, such as pedagogy, or to share practices, but that they rather provided training in skills that they need to acquire, such as the use of particular online tools and systems. If this is the focus that the teachers in my study want in their professional development, discussions of practice around OER which encourage the sharing of pedagogical knowledge and transform tacit knowledge into 'commonly usable knowledge' (Iiyoshi & Kumar, 2008) seems like a useful focus for future staff development events. Secondly, whilst communities of practice enable the capturing and sharing of tacit knowledge in organisations (Wenger *et al.*, 2002) I questioned the extent to which the concepts of communities of practice, situated learning, and legitimate peripheral participation (Lave & Wenger, 1991; Wenger, 1998) really enable us to understand the sharing of tacit professional knowledge of ALs in a distance, distributed university such as the OU. Engeström's (2001) concept of expansive learning, on the other hand, seemed quite appropriate when dealing with learning 'something that is not stable, not even defined or understood ahead of time' (Engeström, 2001, p. 153), such as the new professional practices involved in using OER, which are transforming the culture in which ALs work. This model resonates with Senge's concept of generative learning (Senge, 2006), which necessitates experimentation, feedback and ongoing examination of how problems are solved. I also asked whether some ALs might be engaged in this sort of learning, whilst others might still be operating within the acquisition, participation or adaptive models. These are questions that have profound implications for the learning opportunities of ALs. As a learning organisation, we need to think about how ALs can best share and develop

their professional knowledge, and perhaps look at how the models of expansive or generative learning rather than the notions of communities of practice might be more useful when engaging ALs in learning about new knowledge and practices that are not yet stable, and are in the process of development.

5.4 Contribution to knowledge

As I explained in the literature review, when I started my doctorate, the research on OER pointed to a gap in knowledge about OER reuse amongst teachers rather than learners (Masterman & Wild, 2011; Windle *et al.*, 2011; Petrides *et al.*, 2008). This has not really been addressed in the last four years, and in 2014 Hassler *et al.* (2014) still assert that there has been little research on ‘the experiences, quality perceptions, learning, and educational practices of OER users and producers’ (Hassler *et al.* 2014, n.p.). In that sense, my study sought to address a gap in knowledge by focussing on an area that was under-researched when I started my doctorate, and still is.

As I have highlighted in Section 5.3, my contribution to knowledge is also in creating a new understanding of an existing issue: the lack of visible reuse, highlighted by Willey (2009a, 2009c). My contribution has been to provide evidence that, although reuse might not be visible, it does indeed take place, at least within the context of my case study. This is significant because it means that evaluations that rely on metrics will be missing part of the picture of what actually happens in practice, and therefore serves as a warning to those that might rely exclusively on analytics to evaluate the success of OER projects.

The other contribution I have made is in the methods used in my study. Much OER research uses either metrics and/or surveys, focus groups or interviews. My research used professional conversations and close observation and discussion of specific

resources used in lessons to gain a detailed understanding of how OER were actually being selected, adapted, used and shared in 'real life' settings. This has enabled me to engage in a very detailed analysis of the OER used by the teachers in this study, something which is not usual in much of the literature, which tends to provide a more broad-brush view of the practices of those engaged in OER.

5.5 Reflecting on my study – deficit or capabilities?

When I started my research, I was very much committed to the OER movement, and felt slightly disappointed that more languages ALs at my institution were not sharing reversioned resources through LORO. The colleagues involved in the LORO project had provided numerous staff development opportunities, and discussed with ALs the benefits of engaging in open practices, but with seemingly little success. As I conducted the professional conversations and I tried to gain an understanding of the practices of the teachers in my study, I became aware that they were not particularly interested in sharing through LORO, and that very few of them even shared through the tutor forums. Although at first I felt slightly frustrated by this, as I listened to the ALs tell me about their reuse of OER, I heard some of them talk about their feelings of isolation; others – as I mentioned above – explained how the staff development events provided for them by the university rarely offered them the opportunities to focus on issues that mattered to them, such as pedagogy, or to share practices. This led me to reassess the ideas behind some of the reasons for the teachers' lack of engagement addressed in the literature, and to reflect on whether a deficit lens (see Section 5.3) is the most useful or fruitful way to consider this issue. Rather than focusing on whether lack of engagement can be remediated through top-down interventions to address perceived 'deficiencies', the capabilities approach literature led me to question whether teachers do not share their

reversioned OER through the repository because that is a practice they have no reason to value.

As discussed in the literature review, a capabilities approach provides a way to understand what it is that teachers have reason to value, and the skills and opportunities that teachers need in order to do what they value. Such an approach might be more fruitful when trying to understand the teachers' behaviours with respect to open educational resources and practices, and what motivates them to share. In terms of practice, this implies less of an emphasis on trying to persuade teachers to share their resources through LORO, which has started to appear in the annual appraisal and objective setting of ALs, for instance, and more of a focus on what OER and OEP are for, what people (teachers, learners) are able to 'be and do' as far as this particular educational project is concerned, and what capabilities it promotes and fosters. As Walker puts it, educational interventions should be assessed 'according to the effects on things people value and have reason to value' (Walker, 2006, p. 46). So it might be that, rather than trying to persuade ALs to share because sharing is intrinsically a good thing (Hylén, 2006; OECD, 2007; Rolfe, 2012), those responsible for the management and professional development of ALs need to consider how best to harness OER and OEP – or whatever other enablers are at their disposal – to address the issues that ALs value and that matter to them.

It might help to discuss a specific example. In the conversations during the data collection phase, ALs identified time as one of the main barriers for sharing OER with other teachers. We might want to address engagement with OEP by removing the barriers identified, although if a teacher says they do not share their own teaching resources or their adapted OER because they do not have time, it is difficult to see how,

in the lives of busy, part-time teachers, more time can be made to engage in these practices in a way that is also sustainable (so payment for sharing OER might work in the short term, but is not sustainable). Looking at the issue through a capabilities lens might enable us, first of all, to understand what it is that teachers value, and then to explore together how open educational practices might enable them to engage in the realisation of the capabilities they value. So, for instance, several teachers said that they do not have time to share their resources with other teachers. However, many of them share with their students, and find time to devise and send materials in preparation to the tutorial, to record the tutorial and share the link of the recording with students, or to send them annotated slides of the tutorial after the lesson. So teachers do find time to share (with students), when sharing is congruent with something they value. The fact that they do not share with other teachers then does not seem to be only about lack of time, but perhaps it is also about not valuing this as much as other aspects of their role. So this might indeed be a case of teachers choosing 'those options that they value most' (Robeyns, 2005). On the other hand, of course, it could also be that teachers have not thought through how open educational practices can indeed also be harnessed to support students better. It might be useful to engage directly with teachers to explore how those aspects they value most can be achieved through Open Educational Resources and practices.

Another example of how a capabilities approach might be used to better understand teachers' engagement with OER is around the issue that engaging in OEP involves an element of risk, as it opens up one's practice to public scrutiny. Sen and Nussbaum consider that there are social and institutional circumstances that act as 'sources of unfreedom' (Sen, 1999) or that, in our case, might limit teachers' agency and make them 'adapt their preferences' (Nussbaum 2000, quoted in Walker 2006, p.40) according to what they think is possible for them. In our conversations, some teachers

talked about how their lack of confidence stops them sharing, and said they did not think that the resources they produced would be of use or of interest to anyone else. At the same time, these same teachers also talked about the importance that creativity had in their work, and how much they enjoyed producing teaching resources. So this is an example of how the capability to create is hampered by the 'sources of unfreedom' (be they institutional, social or personal) that prevent teachers from fully realising this capability by sharing what they create. I would argue that these 'sources of unfreedom', for instance, might be related to a perceived inequality of roles and identities, with part-time teachers' roles being 'limited' to teaching, whereas full-time lecturers' roles also involve scholarship, research, and developing and publishing materials. To take the example of scholarship, the three attributes of scholarship activities are (1) that they have to be public; (2) that they are subject to critical review and evaluation by members of one's community; and (3) that members of one's community need to use, build upon and develop the activity (Shulman & Hutchings, 1998, in Braxton *et al.*, 2001). If part-time teachers consider that scholarship is not part of their role, they might not think that publishing resources is a legitimate activity for them, one in which they might want to engage. Or the fear of subjecting their work to the critical review of their peers might lead them to 'adapt their preferences' (Nussbaum 2000, quoted in Walker 2006, p.40) and not consider that publishing resources is something that is 'possible' or suitable for them to do.

Walker asks how we identify 'valued capabilities for ourselves where those selves are caught up in adapted preferences which we may not recognise as being against our best interests, always adjusting our expectations to our chances' (Walker, 2006, p. 41). In the case above, a capabilities approach might point to the fact that, although teachers might value the capability of creating resources, they are not fulfilling and extending this

capability by engaging in scholarship and making their resources public and open to scrutiny and use by others, because certain conditions are limiting the realisations of their capabilities against their best interests. As academics responsible for promoting the professional development of ALs, then, we might ask ourselves what we can do to address the reasons why ALs are adapting their preferences away from taking part in scholarship.

Considering OER and OEP under the lens of a capabilities approach is one of the areas of research I would like to pursue in the near future.

5.6 Future research

My research, which adopted an inductive approach, has enabled me to develop a number of propositions:

- that the practices of the ALs in my study broadly conform to the OER cycle of finding, composing, adapting, reusing and sharing;
- that adaptation of resources is a common practice amongst the ALs in this study, and that there are different types of adaptation;
- that, in this study, the location, selection, composition, adaptation, reuse and sharing of OER is informed by the teachers' professional knowledge (cognitive, affective and systemic knowledge, skills and competences);
- that reuse and adaptation occur in practice, even though this is not visible, and that the teachers in the study do not usually share their resources publicly, but in more private ways with their students and specific colleagues.

The question of representativeness, or the extent to which the research findings can be generalised in a wider population beyond that in my case study is one that could

be levelled against this piece of research. I have argued in Section 5.1 why I believe this is not an issue with the integrity of this particular study, but in terms of future research I would like to widen the scope of the study to include all of the languages ALs at the OU, to test whether the findings can indeed be generalizable to the whole language AL population, as I suspect they are. For this, I would like to use a different method, i.e. conduct a survey of all languages ALs to confirm that the propositions I have formulated can be generalised to the wider AL community.

In terms of the issue of visible vs. invisible reuse, adaptation and sharing, I would like to replicate the research I have done, and the methods I have used, in other contexts, such as the Connexions repository, to ascertain whether invisible reuse, adaptation and sharing also takes place elsewhere. With this aim, I would like to collaborate with researchers who have worked on the Connexions repository, such as Duncan or Petrides. In the next year I will aim to publish an article on invisible reuse, adaptation and sharing, and to network with researchers who might be interested in my findings in order to continue this avenue of research in collaboration with others. I will also submit a chapter based on the vignettes I wrote of three teachers in my study as part of one of the progress reports, but which I did not include in my thesis (as explained in Section 3.8) to an edited collection celebrating 10 years of LLAS e-learning symposiums, a conference where I presented some of my findings in 2013¹².

Finally, the field of OER is still rather under-theorised (Knox, 2013; Deimann, 2013) and, as explained in Section 5.4, I would like my future research to focus of how to assess open educational resources and practices through the lens of a capabilities approach. The rise of analytics and big data, the reduction of public funding to education and the need to find sustainable business models for the OER movement to survive are important

¹² Now published as Beaven (2015)

factors that will influence the direction the OER movement takes in the next few years. A capabilities approach could provide a framework to understand the adoption of OER and OEP amongst teachers, creators and learners, a framework that is reflexive and critical, and that places individuals at the centre of the OER movement.

5.7 A final word: reflections on doing a doctorate

Through studying for my Doctorate in Education I feel I have developed as a researcher, as a practitioner, and as a person. In terms of my research skills, I have gained a much better understanding of the research process, and of research design, and have developed specific research skills (including using professional conversations as a method to generate data, and using NVivo for data analysis). I have experimented with a methodology and methods of data generation and analysis that I was unfamiliar with; I have had to reflect on and clearly articulate epistemological and ontological perspectives that I had hitherto taken for granted, and address ethical issues around the relationship between me as a researcher and as a practitioner and the teachers whose practices I have researched. In addition, working with large amounts of multimedia data has also impressed upon me the importance of good organisational skills in research. I now feel better equipped to continue doing research as part of my professional role.

Researching a fairly new field has not been without difficulties, partly because the field itself is constantly evolving, so I have had to learn how to keep up to date by constantly searching the literature, and by connecting to existing networks of practitioners and researchers (through mailing lists, social media, conference attendance, etc.). Undertaking the literature review was an important exercise in helping me relate my research questions to the wider literature, but also in focussing my study, discarding

research avenues which would also have been profitable, and to which I might return in the future.

The process of studying for my Doctorate in Education has also proved to be a very humbling experience. Engaging closely with ALs has made me appreciate the enormous professional knowledge and commitment to students that ALs bring to their work. The research has also made me reflect on what it is they value, and how, as an academic institution, we need to understand this and try to enhance those capabilities, rather than adopt models based on remedying a perceived deficit. Finally, studying for the EdD has also been humbling in that it has made me understand that my contribution to knowledge is modest, and that the development of knowledge happens incrementally over time. This piece of research has built on the work of others, and I now offer my modest contribution for others to build on in turn.

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Appendix 1: The OER lifecycle and other models

This appendix includes the full descriptions of the five OER cycles described in Chapter 1.

1. Gurell (2008)

The OER lifecycle

1. Find. Start by looking for suitable resources which contribute to meeting the need or satisfying the desire. This may include using general search engines, searching specific repositories and finding individual websites. Some potential components may be available offline, including last year's lecture notes, class projects, handouts for learners and other resources prepared previously.

2. Compose. With a collection of resources at your disposal, start piecing them together to form a learning resource for yourself, your fellow educators and/or learners. This is a creative design process of building an educational resource from scratch and/or using components you have found.

3. Adapt. While composing OER, it will nearly always be necessary to adapt components to your local context. This may involve minor corrections and improvements, remixing components, localization and even complete rework for use in diverse contexts.

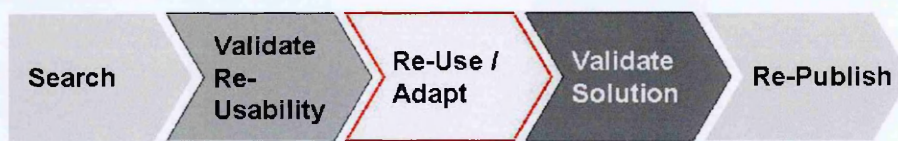
4. Use. The actual use of OER in the classroom, online, during informal learning activities, etc.

5. Share. Once an OER is finished, make it available for the open education community to re-use and begin the life cycle again.

Gurell (2008) acknowledges that although ‘the life cycle follows a logical progression, it is not necessarily followed sequentially in practice’, and that some parts can be done simultaneously (Gurell, 2008, p. 26).

2. Pawlowski & Zimmermann (2007)

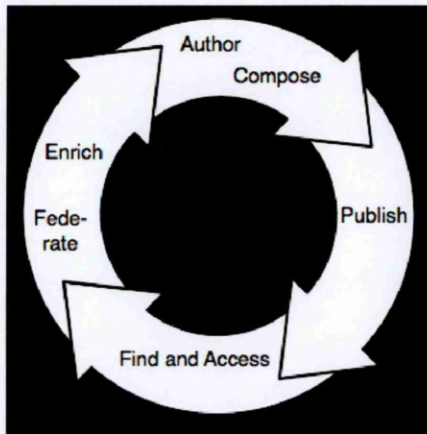
The five phases of the adaptation process of Open Content



- **Search:** In this phase, actors search for useful learning objects, e.g. in a learning object repository or a knowledge base.
- **Validate Re-Usability:** As a first step, the (intended) context and the new context are compared, e.g. using similarity comparisons and recommender systems. The recommender systems can be improved incorporating previous usage behavior (Wolpers *et al.*, 2007) or experiences (Pawlowski & Bick, 2006).
- **Re-Use / Adapt:** In this phase, the learning scenario is retrieved and changed. Typical scenarios include re-using scenarios for a new purpose or context (e.g., from Higher Education to corporate training).
- **Validate solution:** In this phase, it is tested how the changed learning scenario fits the needs of the new context.
- **Re-Publish:** Finally, the new learning scenarios are shared with other users in a repository.

Glahn et al. (2010)

The OER lifecycle



The OER life cycle has four main phases: authoring and composing, publishing, finding and accessing, as well as content-federation and enrichment. Figure 1 illustrates the relation between the four phases. The cycle starts with the authoring of a resource. Resources can be pieces of text, images,

multi-media documents, or videos, but also complex structures such as instructional designs, or course packages.

The second phase is publishing the resource to an OER repository. Typically, this phase includes not only the upload into a repository but also the licensing of the resource as well as the definition of meta-data for the resource.

The third phase includes finding and accessing resources in a repository. In this phase an OER repository has to provide interfaces that allow to search and to retrieve the resources that are stored in the repository.

These interfaces can be present for human-computer interaction, but also for automated agents to access the repository.

The fourth phase refers to content-federation and enrichment of the meta-data of a resource across repositories. Content-federation describes the integration of resources of different repositories into a single meta-repository. Meta-repositories do not store the resources themselves but only keep track of links to resources and resource meta-data.

Therefore, they are also called 'referatory' as a short form of 'reference repository'. In these repositories it is also possible to enrich the meta-data for resources through community-based information, such as additional keywords (tags) or competence related information.

The last phase leads to an extension of the first phase in which existing resources are re-authored according to specific needs or in which several resources are composed into more complex resources. The task of composing new resources from existing resources is slightly different from normal authoring, because the resources that are used in this process typically remain unaltered.

(Glahn *et al.*, 2010)

Santally (2011)

SideCAP (Staff Innovation in Distributed Education in Caribbean, African, and Pacific countries) was a trans-national project funded by the ACP-European Union Cooperation Programme in Higher Education (EDULINK) (<http://sidecap.pbworks.com/w/page/33114051/Sidecap-Home>). The model is based on Gurell's (2008), and is a courseware authoring lifecycle – so a model for big rather than little OER (Weller, 2009) – which also considers the pedagogical needs and requirements of a specific course before looking for suitable OER (Prepare phase)

The SideCAP model

Prepare:

- Module Specifications Sheet (Outline, Duration, Learning Outcomes, Assessment Criteria, Learning Units Description).

- Context of Use (whether mainstream educational system through programmes of studies or short professional development courses or both).
- Identify type of Open Licensing to be used.
- Selection of the pedagogical strategy and instructional techniques.

Search and Classify:

- Identify repositories to be used (e.g. Openlearn, Connexions, MIT, OERCommons, WikiEducator or Wikipedia etc).
- Look for related content – browse metadata, check licence type, check content quality, level, format, pedagogical approach, duration etc.
- Build a checklist of available content – classify according to the pertinent criteria above or as per one's requirements.
- Identify what is missing and what needs to be added, developed from scratch and/or adapted/repurposed/recontextualized.

(re-)Purpose:

- Decontextualize highly adapted learning content.
- Rewrite material that is not contextually correct, write new materials to cater for those that are missing, and/or mix materials from different sources.
- Add context-related learning activities that meet the pedagogical approach selected.

Value Addition:

- Add new learning/pedagogical scenarios that improve the learning experience of learners.
- Provide multiple modalities (such as animations and multimedia) for learning to

suit individual preferences of learners (such as learning/cognitive styles).

- Provide multiple access/delivery modes to increase accessibility to learners with different constraints such as internet connection, limited bandwidth etc.

Publish and Deliver:

- Publish on e-learning platform, stand-alone websites, and CD/DVD formats.
- Deliver the course to target audience.
- Monitor the learner progress and achievements and provide tutoring/technical support.
- Share in the different OER repositories or simply put the content available on your local website and let others know about it.

Review:

- Gather feedback from learners on the course.
- Review content to improve the course for subsequent cohorts.
- Restart the cycle if there are changing requirements and/or to keep up-to-date with ongoing developments in the area or to check for other OERs that have been published or improved.

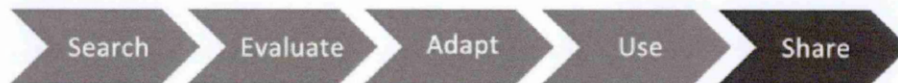
Note that successive cycles might span over a much shorter time frame except if module syllabus is reviewed in depth.

(Santally, 2011)

Clements and Pawlowski (2012)

This model, adapted from Pawlowski & Zimmermann (2007), was designed to describe the process of reuse of OER for teachers.

Process of reuse of OER for teachers



1 Search phase: Where and how can teachers find suitable resources for their use?

2 Evaluation phase: Are the resources suitable for the teachers' use? Are the resources adaptable for the intended context?

3 Adaptation phase: Modifying the educational resource to the use and context, mixing it with other resources.

4 Use phase: Using the newly adjusted resource in the needed context.

5 Share phase: Sharing the newly adjusted resource back to the community.

(Clements & Pawlowski, 2012, p. 5)Clements and Pawlowski (2012 p. 5)

Appendix 2: Letter to participants

Open Educational Resources and Language Teachers' Professional Practice

Dear XXX

I am currently studying for my doctorate in Education at the OU, and I would like to ask you for your help as a participant in my research study.

Aims of the project

My research is on how languages ALs in the Department of Languages use the resources in LORO (www.loro.open.ac.uk) in their teaching. I am interested in how ALs decide which resources from LORO to use, and whether resources are used as they are, or adapted in some way, and how and why this happens. I also want to understand the role of professional knowledge in the use and reuse of resources from LORO, and to explore the extent to which working with Open Educational Resources results in the adoption of other open educational practices. For the study I am looking at the practices of ALs in the French, Spanish and Italian beginners modules.

Methods of collecting data and types of data to be collected

The data collection is in two parts.

Data from individuals:

I would like to meet with you before and after two tutorials (preferably the second and third tutorial). The meetings will take place on Elluminate. The first meeting will take a maximum of one hour, and the others will take 30 to 45 minutes. During our meetings, I would like us to have a conversation about the resources you are planning to use in your next tutorial, especially any resources from LORO you may be using. I am interested to

find out if you use the resources as they are or adapt them in any way, and about the professional knowledge that you are drawing on when making these choices. For the meetings after the tutorial, I would like to hear your reflections on how the resources worked in the tutorial, and to have a look at the actual Elluminate whiteboards you used.

I will need to record the Elluminate sessions, and will also want to download the whiteboards you used.

Group data collection:

I would also like you to take part in two group discussions with other ALs, which I will attend, where participants can look at LORO resources they have used, and discuss if and how they have adapted them. This will take place in Elluminate, and I will also be recording the session and downloading whiteboards used.

The data I will be collecting is therefore the discussions on Elluminate, which I will record and then transcribe and analyse, and the whiteboards you use, which I will download and analyse.

Time commitment:

The data collection will take place between November 2012 and March 2013.

First individual meeting:	1 hour
Subsequent 3 meeting (max. 45 minutes each)	2.15 hours
Two group meetings (1 hour each)	2 hours
Total: 5.15 Hours	

Confidentiality and Data Protection and Freedom of Information Acts:

We will meet in my Elluminate area, and I will record our conversation/group discussion. I will delete the recordings from the server as soon as the meeting is finished. I

will keep a copy of the recordings on my computer for the purpose of transcribing and analysing it, and delete them at the end of the study. Data from the recordings will be anonymised. If you publish any resources on LORO, and for the purpose of this research I want to use one of the resources you have posted on LORO as an illustration, I will ask your permission first, as this might identify you as the author of the resource.

I will comply with the University's guidelines on using personal data for research purposes. I will ensure that after the data collection period is over, I do not hold any personal data (name, email address, etc) that might identify you as a participant in my research.

I will also comply with the British Educational Research Association's Ethical Guidelines for Educational research (2011).

Withdrawing from the study

If you want to withdraw from the study, you can do so at any time, without having to provide reasons and without it carrying any adverse consequences.

I'm sorry I cannot offer you any financial reward for participating in the study. I would also be very happy to share the results of my research with you. I can let you have the initial report on the study (available in May 2013), or the full thesis once I have finished it. If you are interested, I would be very happy for us to present any results from the study at a staff development event in your Region or Nation, or at a research forum or similar event at the OU.

Let me know if you can help me with this research study, and we'll arrange times to meet. If you do agree to take part, please also have a look at and sign the agreement to

participate, and either return it to me as an attachment in your email, or send it to my postal address

Regards,

Tita Beaven

Department of Languages

Faculty of Education and Language Studies

The Open University

GB-Milton Keynes

MK7 6AA

Appendix 3: Agreement to participate

Research project title: Open Educational Resources and Language Teachers' Professional Practice

Agreement to Participate

I, (print name)

agree to take part in this research project.

I have had the purposes of the research project explained to me.

I have been informed that I may refuse to participate at any point by simply saying so.

I have been assured that my confidentiality will be protected as specified in the letter.

I agree that the information that I provide can be used for educational or research purposes, including publication.

I understand that if I have any concerns or difficulties I can contact Tita Beaven (tita.beaven@open.ac.uk)

If I want to talk to someone else about this project, I can contact Prof Agnes Kukulska Hulme, Tita Beaven's research supervisor (agnes.kukulska-hulme@open.ac.uk)

Signed:

Date:

Appendix 4: Data protection

Data Protection: Extract from Application to Human Research Ethics Committee (HREc)

Data Protection

I will comply with the University's guidelines on using personal data for research purposes. I will ensure that after the data collection period is over, I do not hold any personal data (name, email address, etc) that might identify you as a participant in my research. I will liaise with the DPLO in FELS (Kim Green).

I will comply with the 8 Data Protection Principles as follows:

1. Fairly and lawfully processed and only if certain conditions are met.

I will only use data if the participants have given their permission via the consent form.

2. Processed for limited purposes.

The data will be used only for the purposes of this research.

3. Adequate, relevant and not excessive.

Only the data needed for the specific purpose of the research will be collected. No irrelevant information, regardless of whether it might be in the future, will be collected.

4. Accurate.

Although I will have to keep only minimal personal data (email address, dates of tutorials) I will keep all personal data up-to-date and accurate, and amend any records promptly

5. Not kept for longer than necessary.

As indicated in the schedule, I will securely destroy all data as soon as possible, once it is

no longer needed for the purposes of the research.

6. Processed in accordance with the rights of individuals.

I will process the data taking into account the rights of individuals:

- the right of subject access (data on each participant will be available to them on demand) the right to prevent processing (participants have the right to withdraw from the study at any time, and if they do, I will destroy all their data straight away.)
- rights in relation to automatic decision making (NA)
- right to opt-out of direct marketing (NA)
- right to have inaccurate data removed (via the possibility to feedback on PR08)

All data will be anonymised once transcribed.

7. Secure.

I will take appropriate security measures to protect against unauthorised or illegal processing. I will keep recordings and transcripts in a secure external drive that I will only use for the purposes of this research. I will not be viewing or analysing the data in any public space (office, library), but will always do it at home. When discarding any paper records, I will shred them.

8. Not transferred to countries without adequate protection (an exception is with the individuals' consent)

I will not be transferring personal data outside the EEA (European Economic Area).

Date of destruction of original data:

All correspondence with participants about the project: April 2013

Recordings of meeting on Elluminate: By September 2013 (when submitting PR08)

All anonymised transcriptions of recordings: by Jan 2015 (after my EdD viva)

Appendix 5: HREC approval memo



From Dr Duncan Banks
Chair, The Open University Human Research Ethics Committee
Email duncan.banks@open.ac.uk¹¹
Extension 59198

To Tita Beaven, FELS

Subject *"Open Educational Resources and Language Teachers'
Professional Practice."*

Ref HREC/2012/1301/Beaven/1

Red form

Submitted 12 November 2012

Date 15 November 2012

Memorandum

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, is **approved** by the Open University Human Research Ethics Committee by **chair's action**.

Please make sure that any question(s) relating to your application and approval are sent to Research-REC-Review@open.ac.uk quoting the HREC reference number above. We will endeavour to respond as quickly as possible so that your research is not delayed in any way.

At the conclusion of your project, by the date that you stated in your application, the Committee would like to receive a summary report on the progress of this project, any ethical issues that have arisen and how they have been dealt with.

Regards,

Dr Duncan Banks
Chair OU HREC

¹¹ please note the change in email address

Appendix 6: Websites mentioned in the text

Accessed 1 October 2014

LORO: <http://loro.open.ac.uk/>

OpenLearn: <http://www.open.edu/openlearn/>

OU YouTube EDU channel: <http://www.youtube.com/oulearn/>

OU iTunes U resources: <http://itunes.apple.com/gb/institution/the-open-university/id380206132/>

SCORE (Support Centre for Open Resources in Education, 2009-2012):
<http://www8.open.ac.uk/score/>

OER Research Hub: <http://www8.open.ac.uk/about/open-educational-resources/oer-projects/oer-research-hub>

ORIOLE (Open Resources: Influence on Learners & Educators):
<http://orioleproject.blogspot.co.uk/>

OPAL (Open Education Quality Initiative):
<http://www.icde.org/ICDE+to+play+key+role+in+Open+Educational+Quality+Initiative.9UFRzW5W.ips>

TESSA (Teacher Education in Sub Saharan Africa): <http://www.tessafrica.net/>

TESS-India (Teacher Education through School-based Support in India):
<http://www.open.ac.uk/about/open-educational-resources/oer-projects/tess-india>

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