



## Developing open academic practices in research methods teaching within a Higher Education in Further Education context

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**Abstract:** This paper reports on a SCORE teaching fellowship project focused on embedding open academic practices within social science research methods teaching. The host institution is a large, mixed economy Higher Education in Further Education (HE in FE) college where the majority of the HE provision is at full degree and postgraduate level. This requires effective research methods teaching at levels 4 (first year of undergraduate study) to 7 (Masters level, postgraduate study) and is an argument for making good use of the high quality research methods OER available through repositories such as Jorum Open, iTunesU, the National Centre for Research Methods and Merlot. However as the HE provision sits within a further education framework, historically there has been a strong emphasis on extended face time with students. As a result the introduction of blended and distance learning pedagogies to supplement or substitute this face time is a fairly new concept which is currently starting to take shape within the institution. This transition is in part driven by the learners' own preparedness for e-learning and their increasing expectations for such provision (Online Learning Task Force, 2011).

This project has sought to develop tutors' awareness of OER for research methods teaching and evaluate the embedding of such resources in academic practice. Tutors from three different disciplines engaged in evaluating 22 research methods OER and subsequently embedding some of these in teaching practice. Using criteria for evaluating OER emerging from the literature (Windle, et al., 2010; Pegler, 2012), each tutor completed 6 evaluative questionnaires - three for OER they would like to use in practice and three for OER which they would not consider suitable for reuse. The tutors participated in extended interviews the purpose of which was to develop an understanding of their preferences and needs where reuse of the resources in academic practice was concerned. Learning designs for embedding OER in specific modules were developed on the basis of the evaluation. These learning designs applied pattern based frameworks (Learning Design Support Environment, 2011, Littlejohn and Pegler, 2007, Oliver et al., 2002) to plan and structure academic practice with OER. The learning designs were trialled with students at levels 5,6, and 7 on two different programmes of study. Focus group interviews were conducted with students who used the OER in a self-directed way, beyond their face-to-face sessions.

The findings this paper reports on are concerned with understanding the role

which OER have in developing e-learning within HE in FE academic practice. In addition, the capacity of OER to meet learners' needs in this context will be explored. Conclusions are drawn regarding the contribution which OER make in supporting learners and tutors in research methods teaching and learning.

**Keywords:** Research methods, academic practice, OER, learning design, reuse, threshold concepts

## **Introduction and context of the study**

Funded by the Support Centre for Open Resources in Education (SCORE) this project aimed to explore the role of open educational resources (OER) and open educational practices (OEP) more broadly in supporting the teaching and learning of research methods within several subject disciplines. The study was situated within a large, mixed economy Higher Education in Further Education (HE in FE) college where the majority of the HE provision is at full degree and postgraduate level, however also involves work-based learning qualifications such as Foundation Degrees.

## **Access to Higher Education**

Historically, as the HE provision at the college sits within a further education context, there has been an emphasis on extended face time with students and the introduction of blended learning and the open learner premise (McAndrew, 2010) are relatively new concepts which are currently beginning to evolve within the institution. It can be argued that the transition towards more open practices in education, where the learner is positioned in a '*wider open world of free access in which learners finds themselves*' (McAndrew, 2010: 9) and the tutor increasingly participates in the open sharing and reusing of teaching materials, is essential for learners within the institution. One of the reasons for this is that a significant proportion of the student population consists of mature students in work, who require more flexible forms of delivery. A significant and increasing part of the delivery to foundation degree learners for example, is managed through e-learning provision, including a mixture of VLE participation and personalised learning through the use of e-portfolios. As these practices are evolving and are fairly new to both staff and students the move towards open practices in teaching and learning which underlies any form of e-learning provision needs to be carefully considered and supported.

## **Challenges of research methods teaching**

A key motivator for exploring open academic practices for the project emerged from the challenging nature of research methods teaching. The institution's HE strategy reflects the ESRC and HEFCE drive towards better preparation of undergraduate students with a research methods foundation (MacInnes, 2009). The challenges in achieving effective teaching and learning in research methods have been explored in the literature as grounded both in the students' understanding and the staff's preparedness to teach both qualitative and quantitative research methods. This is even more likely to be the case where an HE in FE learning and teaching context is concerned. As outlined by HEFCE, the key purpose of HE in FE is to deliver and develop higher level skills, amongst which are research and independent learning skills, particularly to learners accessing higher education through the widening participation route (HEFCE, 2009). However there is a recognition of the issues with knowledge and expertise where research skills are concerned:

*'FE staff may not be exposed on a daily basis to institutional debates on research... Partner HEIs may offer free standing modules or workshops on research methods, or could be invited to present a workshop to introduce staff to current discourse on research approaches and methodology'* (HEFCE, 2009: 29).

Within this there is a clear need identified for external knowledge and expertise as a way of enhancing practice in research methods teaching in an HE in FE context. Besides the visiting lecturer approach identified here by HEFCE, it can be argued that open practices, dialogue and sharing of practice by academic staff could play a significant and positive role in addressing these needs.

In addition to continuing professional development needs for staff and good quality provision for learners, the research methods teaching context lends itself well to development through open practice. Research methods teaching is complex as an area of academic practice, involving a combination of theoretical/ conceptual understanding and practical skills acquisition within the learning process. Within the institution, social science research methods are applied across disciplines as diverse as Education, Early Childhood Studies, Sports and Exercise Science, Applied Social Sciences, Psychology and Criminal Justice. The theoretical and skills knowledge base therefore is not subject specific, rather it acquires specificity through the examples, data, overview and presentation which the tutor brings to bear on the academic delivery of the subject. Therefore, the possibilities which OER offer to revise and remix content as defined by Hilton et al. (2010) are essential for allowing the tutor to firstly reuse resources containing the common core content of research methods OER available and secondly revise and remix these to provide the subject specificity necessary to engage learners. As some of the findings of this study indicate, the tutor's capacity for contextualising the OER available emerges as the key role of the tutor who adopts open academic practices. This is also indicative of how the tutor role of teaching with OER is evolving away from the development of content and towards the design of the learning experience (Learning Design Support Environment, 2011).

Learners face a different set of challenges relating to pedagogical issues with research methods teaching. The issue of students' understanding and application of research methods concepts can be explored further through Land and Meyer's definitions of troublesome knowledge and threshold concepts (Land and Meyer, 2010; Meyer and Land, 2003). According to the authors, troublesome knowledge is that which requires a transformation in the learner's understanding in order for learning to take place. The authors further define troublesome knowledge as *'when what is to be assessed lies outside their prior knowledge and experience'* (2010: 62), in other words knowledge which is abstract and of which learners have little prior personal or professional experience. Threshold concepts are described by the authors as a *'portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding something ... without which the learner cannot progress'* (Meyer and Land, 2003: 1). In the process of transformation, learners undertake a journey within which they pass through 'liminal states' - those stages in the learning process where learners become stuck in their understanding of the subject. Within these liminal states the learner needs to experience a transformation in their way of thinking in order to fully understand the threshold concepts involved.

Examples of some of the many threshold concepts within quantitative and qualitative research methods teaching could be probability testing and the measures of statistical significance and in qualitative research - the concept of constant comparison in grounded theory analysis. Research methods as a subject relies heavily on such threshold concepts, therefore the possibility of

students experiencing liminal or stuck places is increased. Land and Meyer propose the need to use threshold concepts in context and to further support these with '*discursive resources*' (Land and Meyer, 2010: 70) which would act as stimuli in the process of understanding the threshold concepts. These stimuli should offer opportunities for the learner to '*think like a researcher*' and engage with the conceptual language of the discipline (2010: 71).

It is possible to see a clear role for OER in addressing the difficulties of research methods teaching if we look at this subject as a source of troublesome knowledge. Open resources online often offer a mixture of interactive, discursive and adaptive elements (Laurillard, 2002), and can thus serve as stimuli to support the understanding of threshold concepts. The requirement for situating concepts within a relevant context can be addressed through the use of real world open data, such as is accessible from the Economic and Social Data Service (ESDS, <http://www.esds.ac.uk/>). There is increasing evidence that large scale research surveys, in their search for opportunities to disseminate findings more broadly, are making data openly accessible to the HE sector for reuse in research and teaching contexts (Growing Up in Scotland, 2012).

Within this project therefore, using a combination of opportunities including open data and interactive OER was seen as a way to engage research methods tutors at the host institution in developing open academic practices, and a way to support learners more fully in their mastery of research methods theory and practice.

## **Aims of the project**

Based on the context and pedagogical needs outlined in the introduction, the aims of the study involved the following:

- Raising staff awareness of the value of OER, through actively involving staff in the evaluation and embedding of OER in academic practice
- Working towards the embedding of OER in teaching practice across several disciplines, with a focus on research methods skills and knowledge.
- Developing an understanding of the elements of the changing learning blend where OER are introduced. This includes understanding learners' needs and preparedness for OER as well as exploring the use of online and physical spaces and forms of dialogue to support the use of OER.

## **Methodology**

An action research framework was adopted within this project to reflect the change oriented nature of the project's aims. Reason discusses participatory forms of action research which aim to both '*produce knowledge and action directly useful to a group of people*' and '*...to empower people... through the process of constructing and using their own knowledge...*' (Reason, 2001: 182). As the project's aims were primarily to engage staff in open educational practices in their research methods teaching and to support them in developing approaches to embedding OER in teaching, the action research approach involving the production of knowledge and the development of academic processes which enhance ownership of this practice was highly relevant here. The collaborative ethos of action research was implemented within the project to support each participating tutor in enquiring into their own teaching practice and judging the value and place of OER within this - thus each participant was also a researcher themselves. As research methods teaching in the institution often takes on a collaborative or team teaching approach, I was able to encourage participation in the study from research methods tutors by building on this existing collaborative practice. As a researcher and a research methods tutor therefore, where my academic practice began to involve the use of OER,

this provided a point of engagement with open practice for my research methods colleagues as well.

## **OER evaluation by tutors**

Three research methods tutors participated in the study from the disciplines of Teacher Education and the Masters in Education (postgraduate level), Applied Social Sciences (undergraduate) and Criminal Justice (undergraduate). Each tutor explored a range of research methods OER and chose five of those for an in-depth evaluation. The evaluation was conducted through a detailed questionnaire followed by a semi-structured interview. The questions were derived from considerations of pedagogical effectiveness and pedagogical responsiveness of reusable learning objects identified through the Learning Object Attribute Matrix (LOAM) (Windle et al., 2010) and the motivation, technical and quality implications of reuse identified by the ORIOLE project (ORIOLE, 2012). The subsequent interviews focused on discussing in more detail the responses from the questionnaire. The LOAM tool was also useful as a way of visually mapping out the pedagogical attributes of the OER evaluated, thus adding a layer of visual analysis to the evaluation.

In order for participating tutors to be able to evaluate research methods OER a collection of existing OER was set up through Cloudworks (<http://cloudworks.ac.uk/cloud/view/5548>). Initial conversation with staff revealed that there was little prior experience of accessing OER through repositories, therefore selecting the resources under a broad 'research methods' focus and making these easily accessible for the participants, was a necessary scaffolding step. More importantly however, the evaluative questionnaires required tutors to explore aspects of OER which were pedagogical, technical and related to quality as outlined within the ORIOLE project (ORIOLE, 2012). Thus the collection of OER for evaluation had to represent a range of resources with different levels of granularity: big significant resources and small bits of content (ORIOLE, 2012), as well as different levels of context specificity, adaptability and interactivity. The reasoning which tutors applied to these choices would be a basis for understanding barriers and enablers for adopting OER, as well as giving an insight into the needs of tutors in designing the learning experience. Tutors were instructed to select three examples of OER which they found particularly useful for their research methods teaching and two examples which they thought were interesting but which they would not use in teaching.

## **Focus group interview with students**

Following the evaluation by tutors, each tutor selected a range of OER to introduce and embed within their research methods delivery. A focus group interview was conducted with one of the student groups exploring their perspectives and experiences of using OER as part of studying research methods. 7 students from the BA Hons Applied Social Sciences programme, studying Social Science Research at Level 5 took part in the focus group interview.

As the specific OER used in this instance was Online Qualitative Data Analysis (<http://onlineqda.hud.ac.uk/>), there was a further focus dictated by the content and aims of the resource, which was on the extent to which the resource helped with understanding the principles of grounded theory and applying coding techniques in qualitative data analysis with NVivo.

## **Data analysis approach**

The small number of participants in the study necessitated an overall qualitative approach to the analysis. The questionnaire's multiple choice responses were not analysed in themselves as this would not have resulted in significant data.

However these questionnaire responses were used to subsequently focus the semi-structured interview discussions. The qualitative interview data from tutors and the focus group interview data from students were analysed using NVivo and applying a thematic analysis approach, using hierarchical coding.

## Research findings

The analysis of the evaluations of OER which the three tutors carried out provided an insight into both the enablers/motivators for implementing OER in academic practice, as well as the barriers to adoption. The following sections will discuss the key themes which emerge as significant for understanding this decision making process.

### OER and interdisciplinary knowledge

Some of the key advantages of OER highlighted by the tutors were in the potential of the resource to address the understanding of abstract concepts, seemingly unrelated to the discipline. Both the Sociology and the Education tutors made similar points about the way the conceptually complex knowledge of research methods can be addressed by the interdisciplinary nature of OER. The Education tutor defined interdisciplinarity as:

**Education tutor:** *Well it is whatever is around that can help us understand the case, whatever is around which can help us understand learning, whatever is around that can help us understand change and innovation ... if you look at it from more interdisciplinary point of view - you start with a problem, and say who can tell us about that problem.*

The Sociology tutor similarly made the connection with interdisciplinarity. The easy, at your fingertips access to resources online encourages learners to explore content independently. In addition, the interactive and interconnected nature of some OER encourages learners to link across the disciplines, accessing external resources and making connections on their own. From the tutor's point of view the interconnected nature of OER facilitates this kind of interdisciplinary thinking:

**Sociology tutor:** *What I found pretty much with all of these that I looked at is that there are uses in other modules as well... I could see that the commentary on the BBC remake of the Zimbardo study is very useful for introduction to psychology so again we are going away from only seeing it as learning about research per se.*

This form of interdisciplinary thinking is seen by the tutor as a strategy for learners to situate their knowledge into a broader framework of related subject knowledge. This strategy could provide support with some of the conceptual difficulty which learners experience with research methods as a subject of study. According to Meyer and Land's theory of threshold concepts (2005), in order for the learner to move beyond liminal places and internalise troublesome knowledge, their learning needs to be contextualised and supported by stimulating resources. The interconnectedness which OER provide to other related subjects, resources and more familiar examples can be seen as the necessary contextualising and stimulus mechanism. It is clear that this kind of interdisciplinary learning is best supported by resources which are live, and continuously updated - which online resources by their very nature can be.

The tutors' evaluation here suggests that OER which provide visual, narrative or interdisciplinary context are most likely to be successful for the teaching of research methods. OER have potential to address the conceptually difficult nature of the subject and contextualise this, thus supporting cognition in areas where the learner may encounter troublesome knowledge.

## The tutor's role in the interface with OER

The introduction of OER creates certain tensions with regards to the teacher's role in the teaching and learning context. While interactive resources provide engagement on the level of introducing sound, moving image, interactive feedback, there is an important interpersonal level of teaching and learning which a good learning experience should provide. Njenga and Fourie (2010) argue that human contact in teaching and learning plays an important role in the knowledge construction process which should not be undermined by the technological push. The authors further argue that enthusiasm for e-learning can blur the boundaries between *information* and *knowledge*, erroneously presenting limitless and immediate access to information as access to knowledge. This makes it necessary to consider whether OER alone provide access to knowledge. The evaluations with staff highlighted their stance: the process of knowledge creation, with or without OER, requires some tutor's input:

**Education tutor:** *These are fantastic resources. The clever bit surrounds how you will actually use them and integrate them into your teaching. That also depends on the nature of the open resource as well. Some are more flexible than others, some you will have to do more background preparation and some after-work. Others are kind of almost freestanding... all have that reasonable degree of flexibility but they all need to have some prefacing and some follow-ups.*

This need to 'preface' the resource use and to guide the learning interactions was evident in the Criminology tutor's point of view as well:

**Criminology tutor:** *'would learners be able to use [the OER] autonomously' - undecided because obviously if they sit for half an hour then they are going to find things but I would have to guide them as to why I need them to read or listen to... So it would have to have some guidance.*

The tutor's role was also discussed in the context of reusing the resource over more than one level of study:

**Sociology tutor:** *I could see that being used as not the initial lecture on questionnaires but a development of what they have done so far. So rather than the students only having one session on questionnaires I could see it better that they could have an initial session and then tweaking and improving. As that particular one says it is about improving the use of questionnaires. Which might be a skill that needs to be spread across three years - if they are choosing questionnaire for their dissertation then they might want to revisit to improve on their design of questionnaires. So I have placed this as being both for SSR2 [Social Science Research 2, Level 5] and for SSR3 the Dissertation [Level 6] as an update.*

It is evident that all three tutors identified a need to contextualise the resources for effective learning and teaching. The tutor's role articulated in the responses emerges as one of introducing the knowledge context before directing learners to explore OER on their own. In addition, where the OER were envisaged as working across several levels of study, as in the Sociology tutor's example, the tutor's role would be to embed the use of the resource in her delivery in different ways depending on the learning objectives concerned.

## OER and the development of the tutor's own academic practice

The role of the tutor in reusing OER has to be seen as professional academic

practice. In this context of professional practice and development, the possibility that the open resource itself could act as inspirational material and a trigger to rethink delivery was discussed. OER here were seen as a form of creative spark which opens up opportunities for the tutor to think about further and alternative ideas of how to introduce the subject to learners. However this discussion was in the context of external pressures which limit such creativity:

**Education tutor:** *'I mean what I could quite see there is that, if I had the time and I was feeling positive and creative, not wrecked and worried ... you could create scenarios - like 'you have been given the task to conduct action research into this...how do you go about doing it'...What it does is that it kicks off a lot of creative ideas and follow-ups.'*

This type of concern to some extent places a barrier to the creative benefits of OER. They encourage creativity however in order for a person to be creative they need to also be relaxed and free from external pressures (Cropley, 2001). To a certain extent this could explain some of the reluctance in the uptake of OER - where teaching staff feel pressure, creativity takes second place. On the negative side, this could also mean that it is more likely for staff to utilise OER resources which are quick and easy to reuse, offering time saving potential rather than engaging in reuse which offers potential for rethinking and innovating curricula.

## **Towards a blended learning approach to delivering research methods with OER**

The tutors' exploration of OER inevitably raised questions regarding teaching and learning strategy. As online resources their adoption would necessarily mean engaging in blended learning forms of delivery. From the tutors' comments it was evident that they would actively consider the possibilities to support learners' self-directed use of OER with discursive/communicative e-learning tools. However it was also evident that at present the practices of utilising online discussion boards for example were not fully developed:

**Researcher:** *Have you thought about combining for example them watching a video and then having a discussion online? Or do you not use those very much [online forums].*

**Criminology tutor:** *We are at a point now with our degree where we are looking to do these kinds of things - we have not had them before where we have discussion boards and forums, we haven't got any forums, but we are at a point now where we have built our foundations and we are looking at forums - so definitely if I provide them with MP4s to watch and then provide a forum for those - that's the way forward now.*

It was evident that while this practice was currently underdeveloped, tutors were prepared to actively explore discursive forms of e-learning to support learners' use of OER. OER can therefore be seen as the vehicle for developing blended learning approaches in academic practice.

In terms of teaching strategy, the Criminology and Sociology tutors outlined specific ways in which they could see OER being used. One example was the video material from iTunesU for which both of these tutors showed enthusiasm. Both tutors were keen to see this type of resource used as revision material by learners and as stimulus material which would in turn contribute to collaborative discussion. The fact that tutors believed this material was easy enough for learners to navigate meant that they were equally supportive of the iTunesU resources being used in a self-directed way with discussion online, as they were with using the video material as part of a taught session with seminar or



workshop activities providing the discursive layer of the interactions. The use of iTunesU was therefore outlined within face to face lectures, individual, self-directed exploration and collaborative discussion.

While iTunes is not universally available within the college, the institution is currently revising its policy in this regard. Increasing use of mp3/4 players and tablets for teaching and learning purposes seems to be driving the need for more accessibility to iTunes. The teaching strategies articulated by the tutors above involve an essential element of working with the resource on campus and being able to signpost learners to the resource during a lecture, or through the institutional VLE. The connecting role which the tutor needs to perform in introducing, 'prefacing', contextualising the resource needs to be more fully facilitated through seamless access to iTunes. It can be argued that the relatively low level of openness of the iTunesU service and the fact that it does not utilise a Creative Commons licence creates a form of digital divide for smaller institutions, such as those in an HE in FE context. However present practice reveals that these challenges can be addressed as the demand for this service from educators is rapidly increasing.

Based on the tutors' responses regarding possible teaching strategies with OER, the use of open resources and open data for research methods teaching and learning was piloted on several modules including:

- BA Early Childhood Studies, year 2, Research Methods module
- BA Applied Social Science, year 2, Social Science Research 2
- MA Education Innovation and Enterprise

The section below outlines the experiences of students on the BA Applied Social Science programme of using a specific OER - Online Qualitative Data Analysis (University of Huddersfield), as part of their studies on Social Science Research.

### **Using OER with Sociology students to support learning the principles of Grounded Theory and applying its coding procedures with NVivo**

The University of Huddersfield's "Online Quantitative Data Analysis" resource (QDA) is a large open educational resource with a focus on qualitative research methods and methodologies. It combines a range of media (video lectures, interactive exercises) to convey the nature of qualitative research and encompasses both explanations and examples of how broad methodologies work as well as providing an overview and practical interactive exercises on the application of different coding procedures. The resource further covers the use of NVivo to apply qualitative data analysis techniques - this is achieved through a series of step by step video guides on the application of these techniques.

It was considered appropriate to introduce the Online QDA resource as part of the delivery of the Social Science research module for level 5 (second year undergraduate) Social Sciences learners. Many of the topics covered in the module pertaining to qualitative data were also covered in the OER. In addition, the module involved introduction to NVivo and an analysis task with NVivo was built into the learners' assessment. The open resource was therefore considered a useful addition to the core provision on the module.

The key issue was to provide support with conceptually difficult material in research methods, as well as to support learners' development of skills in applying procedural knowledge, for example coding procedures, to the analysis of data. The use of OER was also seen as providing the necessary stimulus material for learners and acting as revision material.

## Learners' experiences

Learners discussed the challenges of studying research methods. The social sciences second year students talked about the transition, which they were making from studying only quantitative methods in year 1 to studying qualitative methods in year 2. Some authors highlight that the division between qualitative and quantitative methodologies is 'superficial' (MacInness, 2009) which would suggest the need to introduce both types of methodologies concurrently.

The combination of theoretical and technical concepts which the learners have to acquire is another challenge in research methods teaching. Having to understand the theoretical concepts around Grounded Theory and the procedural techniques of applying coding, as well as the technical interface of NVivo as a tool for analysis, introduces some complex challenges for these learners.

The introduction of the OER into their learning resource provision brought several advantages which students articulated and which could to some extent be seen as addressing the difficulties articulated by the learners.

One of the advantages which learners highlighted with using video material from the QDA website was the interactivity of the resource - the ability to pause, rewind, take notes at their own pace - this kind of flexibility of the interactions, of the pace of learning and the ability to take control over the learning interactions was something which learners valued:

**Student 4 Female:** *I watched some of the videos on QDA. It was useful because you could pause it if you didn't catch it and make notes; sometimes in a lecture it is really fast and you can't obviously pause it, but when you are watching a video you can pause it and make notes and carry on to your own pace rather than everyone else's. So I thought that was quite useful. When I watched on QDA I could make my notes how I wanted to make them.*

The ability to control the medium and to work at their own pace, seems to contribute to self-directed learning practice. Key elements to notice in the learning design here are the fact that the resource content was introduced by the tutor in class, thus helping to contextualise the self-directed learning interactions.

The students also reacted positively to the interactive exercises on grounded theory coding:

**Researcher:** *Did you do some of the interactive coding exercises - where you had to assign the code word and ...*

**Several:** *Yes.*

**Student 1 Female:** *When we started doing the NVivo I remember going back to it and thinking 'oh it's just as simple as that then - literally just copying words and giving it a title.*

The interactive exercises provided learners with the opportunity to practice the procedural layer of Grounded Theory. However, care needs to be taken not to oversimplify or take the procedural exercises out of context. The danger with this is that the students may learn how to assign codes, however may not have actually understood the key concepts such as constant comparison or stages of open, axial and selective coding. As Meyer and Land identify (2005), learning of troublesome knowledge requires some form of transformation in the learner. Unless this transformation takes place, the learner may be unable to acquire

knowledge and could instead engage in a form of 'mimicry' or ritualistic/surface learning (Meyer and Land, 2005: 382). This often happens when in an attempt to introduce the concept in an accessible way, teachers, or the resource itself, simplify the concept. While the OER discussed here introduces concepts in significant depth, as well as providing simplified exercises for learners to practice procedures, the interactive and non-linear nature of the resource means that learners could choose to view procedural content without having accessed or understood theoretical content first. This poses certain challenges to knowledge construction which need to be carefully considered.

Attitudes towards the use of OER in general were further explored within the focus group interview. Some of these attitudes can be related to the 'millennials' debate which places mature learners at a disadvantage where learning and teaching which utilises the internet is concerned (Oblinger, 2005). One learner described herself as a 'book person' identifying a preference for hard copy materials rather than online resources. The ingrained habits of working with hard copy seem to have an influence on this learner's readiness to explore online resources. The fact that the student population of the host institution includes a large proportion of mature learners makes it more likely that there will be digital literacy skills which will need to be addressed in order to prepare learners adequately for the range of resources they would need to access as part of their learning. The digital divide which these learners may experience needs to be addressed on the module and study skills level.

However it also needs to be considered that the learning experience varies significantly depending on individual learning needs and preparedness for working online. One of the learners highlighted that she has a better chance of understanding the material if she has searched and identified this herself. Searching for her own resources online helped the sense-making process and allowed the learner to internalise better the concepts searched for and the information found:

**Student 6 female:** *I think if you go on and find your own resources you understand it in a way which is better for you... we get these booklets and I don't tend to read them because it is too much and if I was to find it myself I would find bits that are relevant to what we are doing rather than reading it all to find relevant bits I can see it straight away.*

This point of view highlights the advantages of independent research to meaning making and narrative construction by the learner. Independent research is seen by the learner as fundamental to the process of internalising learning. This highlights a clear need for OER which are searchable by learners for use in a self-directed way. This example also suggests that the self-directed learning proportion of the learning design should incorporate searching for OER by learners, in addition to using the OER specified by the tutor.

## Conclusions

This evaluative action research study provided an insight into processes of developing open academic practices to address research methods teaching within the HE provision of a mixed economy college. It provided an opportunity for tutors to engage in reflexive practice through exploring open educational resources. In addition, the embedding of some of these resources in academic practice was explored on the level of learning design as well as from the point of view of the student experience.

The findings of the study indicate that OER have significant potential to enhance provision for research methods teaching and learning. These resources encourage interdisciplinary ways of thinking about the subject which in turn

support the learner in understanding threshold concepts as described by Meyer and Land (2005).

OER can also be a basis for developing blended learning practices which provide a discursive framework of support for the students - another element which supports the acquisition of troublesome knowledge. It was evident from learners' comments that they found the interactive nature of OER to be supportive of their pace of learning and therefore of self-directed learning in general. In this context OER can be seen as a driver for blended learning approaches and the open learner premise (McAndrew, 2010).

The findings further highlighted that the role of the tutor in embedding OER as part of the learning experience for students is significant. In their own articulation of their role in open academic practice, tutors described the need to preface, contextualise and embed the OER within the module content. The resource is seen as one of a range of support mechanisms within the learning sequence, and its uses vary from tutor led, to learner directed forms of engagement. The key issue of using the OER outside of this guided context, in research methods teaching in particular, is that it could lead to use which produces ritualistic learning rather than authentic knowledge construction.

Finally, the barriers to effective reuse of OER were highlighted. Within an HE in FE context these included the digital divides created by technological infrastructure and digital literacy skills of learners. These barriers further included the impact of external pressures on staff time which in turn could result in limited ways of reuse constituting time saving measures, rather than reuse aiming to enhance creative teaching practice.

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