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Guidelines for structuring learning and teaching opportunities relevant to educators' open educational resource (OER) engagement

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Guidelines for structuring learning and teaching opportunities relevant to educators' open educational resource (OER) engagement, O1

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1.   Executive Summary

Six guidelines for structuring learning and teaching opportunities relevant to educators' open educational resource (OER) engagement are proposed in this document. The guidelines are designed to provide information and guidance to facilitate the design and construction of professional learning opportunities to support educators in building new learning practices around OER. In determining how best to support educators' learning with and from OER, it is necessary to consider not only the nature and structure of learning opportunities they require but also the knowledge and content these opportunities should encompass. Six areas of knowledge that need to be targeted are proposed by these guidelines.

The guidelines are:

Learning should include a range of theoretical knowledge of OER.

Theoretical knowledge relevant to OER engagement would incorporate: licensing and legal frameworks; technical and hosting; quality assessment; locating OER; adaption and repurposing of OER; pedagogies of OER employment. As educators with different levels of expertise and experience with OER require different theoretical knowledge, learning opportunities should be differentiated.

Learning should include discipline specific theoretical knowledge of OER.

Expertise development is enhanced and knowledge is more readily assimilated and internalised when it is easily translatable to the contexts in which it will be utilised. For educators to achieve the highest levels of OER engagement, where their actions and learning are embedded within their practice, it is necessary for them to have developed knowledge and expertise that is specific to and situated within the personal settings and contexts of their work.

Educators need the opportunity to develop the experiential and practical knowledge and skills that will enable them to actually engage with OER in their practice.

Educators are more likely to learn about and use OER when they are connected to and embedded within their day-to-day work tasks. Practical knowledge is necessary for translating theoretical conceptual knowledge and learning around OER engagement into the acts and contexts of practice.

Educators need support to develop the self-regulative and socio-regulative knowledge that will enable them to understand the value of OER both for their own practice and professional learning and for their students' learning and development.

Self-regulative knowledge consists of the meta-cognitive and reflective skills that learners use to monitor and evaluate their own actions and to make sense of and apply the knowledge and expertise they are creating within the varied contexts of their professional practice. Self-regulative knowledge acts as a mediator for combining theoretical knowledge and practical expertise and experience.

Continued learning and development is enhanced when educators have the opportunity to interact with others around their OER use and learning.

Socio-cultural knowledge is developed through both online and offline interactions and is important in encouraging sustained engagement with OER by educators at all stages of their learning journey.

Each workplace has its own culture guiding professional practice, and therefore learning about OER ideally should be linked with work activities.

Educators' engagement with OER is reliant not only on the learning opportunities available to them as individual, independent learners but also the construction of workplaces that support their learning journeys and engagement with OER. Supporting the construction of workplaces that facilitate educators' ongoing learning with OER will help to promote higher levels of OER use and learning.

2. Introduction

The ExplOERer project fosters sustainability of open educational resources (OER) in higher education contexts through supporting their reuse and repurposing in new learning contexts and by expanding the role of OER in learning ecosystems. The project focuses on supporting adult educators to more consistently and effectively reuse and repurpose OER in and for their professional practice (https://exploerer.wordpress.com/).

Adult educators frequently transfer content resources, knowledge and practices between the various contexts that comprise their practice, reusing material from one setting in new places and situations. OER can help to ease this process of transfer by lowering the barriers that exist between different contexts. However, there remain tensions between 'open' and 'educational' arising from the rules, cultures and codes of learning settings that are not permeable to change or to the adoption of openness. The challenge is to build on new learning practices around OER, known as open education practices (OEP), involving attitude change and a different way of approaching 'content' implicating teachers' digital literacies and abilities to self-regulate. The contextualisation of OER within a broader understanding of OEP aligns with ideas presented in The Capetown Open Education Declaration:

Open education is not limited to just open educational resources. It also draws upon open technologies that facilitate collaborative, flexible learning and the open sharing of teaching practices that empower educators to benefit from the best ideas of their colleagues. It may also grow to include new approaches to assessment, accreditation and collaborative learning (Capetown Open Education Declaration, 2008).

The project conceptualises the adult educator as embodying the dual roles of learner and practitioner. It explores how engagement with OER can trigger meaningful learning opportunities for educators, facilitating the creation of expertise and knowledge across contexts and importantly investigates learning practices and learning processes that most powerfully support educators in their various learning contexts and roles.

This document sets forward guidelines for the design and development of professional learning opportunities to support educators involved in higher education in the use and reuse of OER. The guidelines are informed by the findings of a specially commissioned study that examined the ways in which adult educators create meaningful learning opportunities when engaging with OER together with two widely-accepted and well-utilised theoretical frameworks of OER engagement and professional learning, respectively.

The guidelines are designed to operate on multiple levels. They are intended to be useable by adult educators in their dual roles of educational professionals and practitioners, and as learners who are engaged in more informal learning, which is

situated in the acts and contexts of their professional practice. They are also designed to support people involved in developing formal training courses and professional development opportunities.

3. Methods and Analysis

The study investigating the ways in which adult educators create meaningful learning opportunities when engaging with OER was conducted in two phases. Phase one consisted of an online survey, administered to adult educators across Europe in English (n=521), Swedish (n=16) and Polish (n=35).

	Number	Percentage of total responses
Total	572	
English version	521	91.1
Polish version	35	6.1
Swedish version	16	2.8
Female	332	58.0
Male	240	42.0
School educator	49	8.6
University level educator	484	84.6
Vocational educator	7	1.2
Company or professional trainer	17	3.0
Lifelong learning facilitator	7	1.2
Community educator	4	0.7
Voluntary or third sector trainer	4	.7

Table One: Descriptive statistics from three surveys of adult educators' OER engagement and learning.

The survey comprised of five scales. The first scale asked participants about their current engagement with OER. The second scale measured the influence of educators' workplace learning context and the final three scales measured educators' abilities to self-regulate their ongoing professional learning.

Following the survey, thirty-five participants were invited to participate in semi-structured interviews (Polish n=5, English n=30). The interviews built upon the

educators' survey responses in order to gain a more in depth and detailed understanding of the relationship between their learning behaviour and disposition and their OER use.

Experimental factor analysis of the instrument revealed strong factor reliability and structure. It yielded three factors for OER Activity - resource employment, resource evaluation, resource knowledge development. Six factors for self-regulated learning were identified – experimenting in practice, planning and goal setting, self-efficacy, self reflection, interaction with others, learning value. Factor analysis yielded two factors for workplace learning context – workplace autonomy, scope for learning.

- F1: 'experimenting in practice' (13 items; Cronbach Alpha .917; total variance explained 36.41%). This factor relates to the practices educators employ when performing the day-to-day tasks of their practice that support their learning. All but one item comprising this factor are in Zimmerman's performance phase of SRL.
- F2: 'planning and goal setting' (9 items; Cronbach Alpha .866; total variance explained 6.62%). This factor relates to the actions and behaviours of educators around planning their learning activities and setting goals for both their practice and their learning. 7 items included in this factor are associated with Zimmerman's forethought phase of SRL, with the remaining 2 related to Zimmerman's performance phase.
- F3: 'self efficacy' (6 items; Cronbach Alpha .874 total variance explained 5.52%). This factor is associated with the extent to which an individual feels confident to be able to accomplish all the tasks of their job. All items are associated with Zimmerman's forethought phase.
- F4: 'self reflection' (8 items; Cronbach Alpha .872; total variance explained 5.13%). This factor relates to an educator's ability both to evaluate their learning experiences and the learning that has occurred as well as the intrinsic value of their learning beyond its immediate value. 6 items correspond to Zimmerman's self-reflection phases, with two associated with the performance phase.
- F5: 'Interaction with others' (3 items; Cronbach Alpha .935; total variance explained 1.46 %). This factor encompasses the role educator's interaction with other people plays in supporting their learning. All three items are associated with Zimmerman's performance phase.
- F6: 'learning value (5 items: Cronbach Alpha .833; total variance explained 1.38%). This factor encompasses the value educators ascribe to learning in their professional role and their enjoyment and self-fulfilment they receive from engaging in learning tasks. Three items are connected to Zimmerman's forethought phase and two items are connected to the performance phase.

The survey instrument was also tested for convergent validity, to test the relationship between individual factors. The results of the correlation analysis indicate that an educator's total self regulated learning score is strongly positively correlated with both their OER use and their workplace learning context. Each of the factors identified in the principal component analysis also individually reflect this strong positive correlation. Previous studies suggest that individuals who are better able to self regulate their

learning are more adept at identifying and undertaking learning opportunities in their workplace compared with their peers who are less able to self-regulate their learning. The findings of this study support this contention.

Linear regression was also conducted in order to determine the relationship between the factors identified during the exploratory factor analysis. Results indicate that learning context is a predictor of OER activity as well as all six individual self-regulated learning factors.

The relationship between an individual's capacity to self-regulate their learning and their OER activity also was explored. The multiple linear regression analysis included the six identified self-regulated learning factors together with learning context, with OER activity as the dependent variable. The analysis indicated that only a subset of self regulated learning factors predict learning activities undertaken for a given workplace learning context. Workplace learning context was a significant predictor together with factors self-reflection, interaction with others, and learning value.

The interviews, which were semi-structured in nature, ranged in length from thirty minutes to one hour. They were audio-recorded and transcribed verbatim. The factors identified during the experimental factor analysis stage of analysis provided the initial coding structure for the interview data. The data was then further refined and analysed in order to develop sub categories for each factor and to identify links and connections between them.

The analysis of both the survey data and the interview data have been used to inform the creation of the guidelines.

4. Guidelines Overview

The guidelines have been developed principally from the findings of the survey and interview data. They are designed to provide information and guidance to facilitate the design and construction of professional learning opportunities to support educators in building new learning practices around OER. The findings of the study align with current theories of professional learning, which identify the need for professional development that incorporates both formal and non-formal learning opportunities. Professional learning opportunities further need the flexibility to target the specific needs of individuals in a range of contexts and with varied levels of expertise and competence and to incorporate ongoing and sustained learning opportunities, which are embedded within the practical experiences and workplace contexts of learners.

The guidelines take Wild's (2012) OER Engagement Ladder as a starting point for understanding the learning progression educators' follow when building new practices around OER.
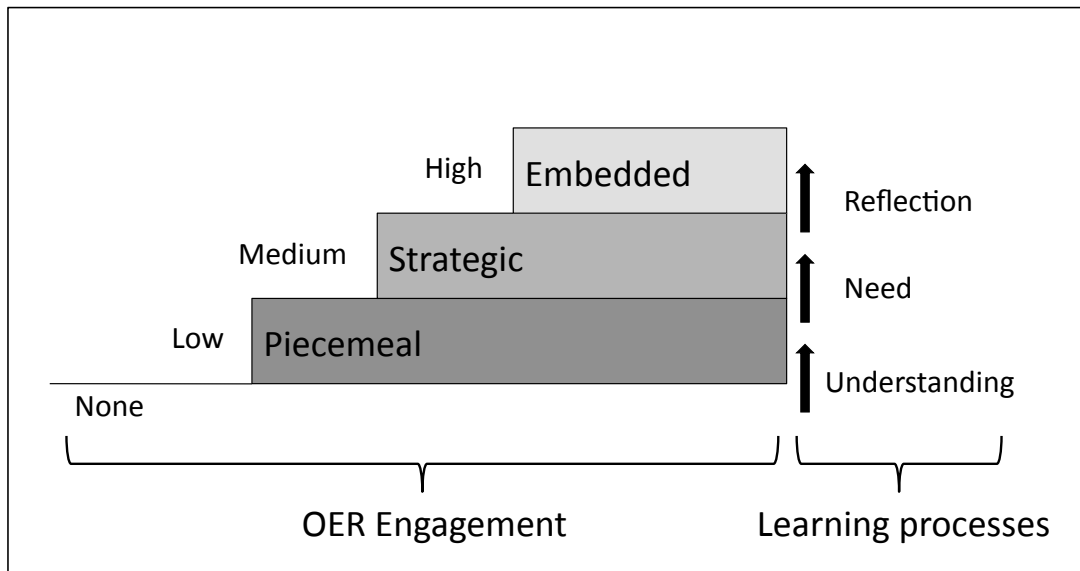

Figure One: Adapted from Wild's (2012) OER Engagement Ladder

Wild's model identifies the four major levels of engagement educators proceed through together with the 'realisation steps' or learning processes that facilitate movement between the levels. Wild's framework highlights the need for differentiated learning opportunities for educators at different stages of their OER learning journey. The need for a variety of learning opportunities, which incorporate both breadth and depth of learning and knowledge is reinforced by the findings of this study.

Breadth refers to the need for educators to become familiar with a wide range of topics surrounding OER use while depth references the expertise or types of knowledge educators require in order to reach high levels of engagement and learning with OER.

In order to provide professional learning opportunities that incorporate both breadth and depth, as well as providing contextually relevant learning that meets educators at their current level and targets their specific knowledge needs, a range of learning activities is required. While a formal-style course may provide educators with some of the knowledge and expertise they require, in order to facilitate high levels of OER engagement among educators it is necessary also to develop non-formal learning opportunities, which provide educators with more contextualised knowledge and skill development. Learning opportunities and knowledge construction needs to be aligned to practitioners needs and directly applicable to their workplace practices.

The data indicate that a key element in the learning process involves educators applying their knowledge and expertise in practice and extending their competence with OER through experimenting in and reflecting on their practice. The development of context-specific learning opportunities enables educators to connect their learning and to develop their knowledge in relation to both their academic discipline and the unique characteristics of their workplace environments.

Alongside the provision of formal and non-formal learning opportunities it is also necessary to ensure that learning activities are differentiated in order to cater to the needs of educators at different stages of OER engagement. As Wild's model demonstrates, educators at different levels of OER engagement not only engage with OER in different ways but also require different types and forms of learning – understanding, recognising need, reflection –to support their progression. Providing a flexible, learner-directed approach to learning is important for enabling educators to undertake activities that are aligned with their current needs.

To fully support educators' engagement with OER it is necessary to develop a range of learning activities that operate as standalone offerings while simultaneously forming part of a larger, integrated learning programme that facilitates educators' advancement through the stages of OER proficiency and competency. This would provide the structure and guidance that some educators require to support their learning with and from OER while providing the flexibility and autonomy for other educators to determine their own learning needs and to engage in activities that best serve their current learning level.

In determining how best to support educators' learning with and from OER, it is necessary to consider not only the nature and structure of learning opportunities they require but also the knowledge and content these opportunities should encompass. Six areas of knowledge that need to be targeted are proposed by these guidelines:

- Conceptual/theoretical knowledge (general)
- Conceptual/theoretical knowledge (contextually situated)
- Practical/experiential knowledge
- Self-regulative and socio-regulative knowledge
- Socio-cultural knowledge (community based)
- Socio-cultural knowledge (workplace based)

These six areas of knowledge are broadly developed from the Integrative Pedagogy Framework (Tynjäla et al., 2006; Tynjäla 2008 & 2009; Tynjäla & Kallio, 2009; Heikkinen, Tynjäla & Kiviniemi, 2011). With its focus on expertise development, the integrative pedagogy model offers a fresh perspective on professional practice, which is well suited to the construction of new learning practices around OER. The types of knowledge construction identified in the Integrative Pedagogy Framework require a combination of both formal and non-formal learning activities.

Formal professional development tends to focus predominantly on conceptual/theoretical knowledge with some attention to practical/experiential knowledge development. While these types of knowledge play a role in developing educators' engagement with OER, they do not provide the full range of knowledge or expertise required to advance learning to the highest level. The Integrative Pedagogy Framework identifies additional knowledge areas that must be supported in order to provide comprehensive learning opportunities, including socio-cultural knowledge and self-regulative expertise. These forms of knowledge are more routinely developed through the informal learning that occurs in and through the acts and tasks of practice and are embedded within the workplace contexts of educators. Developing educators' capacity to learn new OER practices requires a combination of both formal and informal learning opportunities, providing both general and context-specific knowledge as well as the opportunity to embed expertise and learning within the socio-cultural contexts of their professional practice.

5. Guidelines for Learning and Teaching Relevant to OER: Six Knowledge Types

KNOWLEDGE TYPE ONE: CONCEPTUAL/THEORETICAL KNOWLEDGE (GENERAL)

Conceptual/theoretical knowledge includes a wide range of concepts surrounding OER engagement, including knowledge of: licensing and legal frameworks; technical and hosting; quality assessment; locating OER; adaption and repurposing of OER; pedagogies of OER employment. This knowledge is largely explicit and systematic in nature, making it easily communicable and able to be constructed through formal learning activities. The nature of the theoretical knowledge educators require is dependent largely on their current level of expertise and experience in using OER. Therefore, learning opportunities need to be differentiated, enabling educators to access knowledge that is relevant to their current level of expertise and experience.

Licensing and legal frameworks

Educators require knowledge of the legal frameworks surround OER use, including the provisions for re-use offered by OER and Creative Commons (CC) and IPR licensing and the benefits these provide. Knowledge of how to attribute OER is required. As educators gain experience using OER they also require knowledge of how to share resources they have created as well as those that they have repurposed and reused under open licenses. The benefits and potential issues surrounding the reuse and repurposing of resources on a larger scale should also be addressed.

Locating resources

Knowing how to find OER, including awareness of mainstream search strategies and any relevant repositories is pivotal to educators in the early stages of their OER use.

Ensuring educators have the necessary digital literacy skills to support their ability to identify reliable and applicable OER is also necessary. Strategies and templates that can help guide educators' in their search for resources and to evaluate the quality of resources could support learners.

Adaptation and Repurposing of OER

Educators at all stages of their OER learning journeys require knowledge to support them in their adaptation and re-purposing of OER. While educators in the early stages of OER adoption tend to engage in minimal adaptation and repurposing, developing more sophisticated knowledge and acquiring greater skill and expertise in this area is an important developmental stage. Educators with more experience in OER engagement benefit from the development of technical knowledge and skills that enable them to employ a wider range of technologies and techniques when repurposing resources.

Process and pedagogy.

Educators at all stages of their OER learning journey require knowledge of the processes and pedagogical practices that support the effective employment of OER in practice.

Educators with limited prior OER experience need to understand why reuse is both a valuable and a valid educational practice. This encompasses knowledge of the benefits of using OER and the various ways that they could incorporate OER into their practice, including examples of OER use by others. As their conceptual understanding of OER and what they can provide develops, educators need to be supported in how they can make small-scale adaptation to resources. Educators at this stage tend to use resources to reinforce existing pedagogy and processes, rather than to reorient their practice.

Educators who are already using OER in their practice or those educators who have completed an introductory course on OER require more advanced and detailed information and knowledge of OER use and reuse. The advancement in their conceptualisation of OER from resources that supplement their practice to understanding how they can be more fully integrated into their teaching and learning practice should be emphasised. Developing an understanding of how students can engage with OER and the role educators can play in supporting and encouraging OER use among students is required.

Once OER use has become embedded within educators' professional practice, they then require more detailed knowledge about OER reuse and the development of more technical skills and familiarity with a range of technology and software that they can employ in order to repurpose and adapt resources.

Conceptual/Theoretical Knowledge Scenarios from Interviews:

"You need to start already in the design and you need to discuss a lot about those theories because you don't need to reinvent the wheel all the time yourself. To get people to realise that they can save time and money and they can also get the best professors from all over the world if they are working with open educational resources.

I start the talk about creative commons and copyright. … First of all people are not that used to creative commons, they don't really understand what it is always and sometimes they don't really understand the alignment with open educational resources and with creative commons. Some think that everything that is on the Internet is like open educational resources. Then I show a lot about good examples and what you can do and what you can't, how you can use it and how you also can…I mean I can see for myself examples when I share what I'm doing."

"I am more conscious of ensuring that I use it correctly and give credit to the original provider. Not that I didn't do that originally, but I have more awareness of how to find the original provider and I won't just do a Google search to find the image, I'll go off to find out where it originally was and evaluate briefly what the site is because if it's somebody's blog then I'm much less likely to use it than if it comes from a journal paper or a website from a university because I don't want to pass information on or I don't want to use information that could be questionable."

KNOWLEDGE TYPE TWO: CONCEPTUAL/THEORETICAL KNOWLEDGE (CONTEXTUALLY SITUATED)

Alongside the provision of generalised theoretical knowledge educators also require the development of context specific theoretical knowledge that is directly relevant to their discipline area and workplace context.

Expertise development is enhanced and knowledge is more readily assimilated and internalised when it is easily translatable to the contexts in which it will be utilised. In order for educators to develop the necessary levels of digital literacy, where their actions and learning around OER are embedded within their practice, it is necessary for them to have developed knowledge and expertise that is specific to and situated within the personal settings and contexts of their work.

Learners are more motivated to engage in learning opportunities when they can easily see the relevance to their own work and they find it easier to apply theories and concepts when the connections to their own contexts are made explicit. Engaging with context-specific theoretical/conceptual knowledge limits the degree to which educators have to transpose knowledge from its original context into their own context of use. This reduces the cognitive load on educators, therefore facilitating the learning process.

Theoretical knowledge can be made both discipline and workplace setting specific.

Discipline specific

Discipline specific theoretical knowledge is directly related to particular discipline areas. Educators not only want to engage with OER from their discipline areas during the learning process but they also benefit from knowledge of pedagogical practices that are specific to their discipline area. Creating an element of bespoke, discipline-specific learning that supports educators in the location OER that are relevant to their own needs and in the ways to engage with and utilise resources tailored to their discipline would support the learning process.

Resource type specific

Certain educators will also need to develop knowledge of how to engage with and utilise specific types of resources, knowledge which may be applicable across disciplines. For example, for some educators understanding the ways in which they may repurpose data sets or reuse images or video may be particularly applicable to their context. Supporting educators to develop knowledge that is more directly applicable and tailored to their specific, alongside the development of more fundamental knowledge of OER, needs would support their learning trajectory.

Workplace setting specific

Each workplace has its own culture and set of principles guiding the practice of educators. Educators' learning is supported when they engage with resources that are aligned with their workplace culture. This is particularly relevant for the instructional context in which OER are to be employed. Different types of resources and varied pedagogical strategies are required depending on whether a resource is to be employed in a purely online teaching context, an offline, in-person context or in a blended learning environment. Educators require knowledge that is specific to the nature of their course setting and structure.

Conceptual/Theoretical Knowledge (Contextual) Scenarios from the Interviews:

"You can introduce content. Not only detailed content but literally content for context, you might almost say. You can broaden the context of what you are doing and make - it's hard to put into words isn't it, I certainly pick up content that I wouldn't readily pick up like various other systems that are available. I might have been able to pick up this content slowly in the past but now I can pick it up quite quickly and I can use that in my own development and use it in my teaching. It is a question of using it for both content and for development of techniques."

KNOWLEDGE TYPE THREE: PRACTICAL/EXPERIENTIAL KNOWLEDGE

Knowledge building and learning is intertwined and embedded not only within the workplace context but also the tasks undertaken in practice. It is critical that alongside the development of theoretical/conceptual knowledge educators also develop their practical/experiential knowledge. Practical/experiential knowledge encompasses the skills and expertise required to implement learning in practice. The data show that educators are more likely to learn about and use OER when they are connected to and embedded within their day-to-day work tasks. Alongside understanding the theory behind OER and the applicability and usefulness of OER use to their practice and professional learning, educators also require the skills and tacit knowledge to enable them to actually engage with OER in their practice.

When theoretical knowledge is internalised by learners it intertwines with their existing knowledge and skills to become personal, practical knowledge, which is then used to inform and structure their actions and behaviours. This knowledge is necessary for translating theoretical conceptual knowledge and learning around OER engagement into the acts and contexts of practice. This knowledge is personal and specific to individual educators and their contexts of action.

Practical experiential knowledge can be developed through both formal and informal learning activities. Formal learning can support the development of educators' practical knowledge through the incorporation of practical, hands-on opportunities that enable educators to try out and put into practice the knowledge they are learning. The opportunity to try out new knowledge and skills in a safe, structured environment, which also provides opportunities for feedback, supports the accrual of practical experiential knowledge.

Because practical experiential knowledge is case and location specific, it is developed also through learning by doing in practice. Educators need to be encouraged and supported to experiment with OER within their practice and to reflect on and to evaluate the effectiveness of various strategies they employ.

The knowledge educators develop through participation and experimentation in practice requires strong self-regulatory knowledge. Educators need to be able to reflect

on and evaluate their actions and learning and to iteratively adjust their behaviour in order to achieve maximum learning and practice potential.

Practical/Experiential Knowledge Scenarios from the Interviews:

"Well, now you are back to the old story about the painter Whistler – you've probably heard the one about only giving his students 45 minutes to paint his portrait and he said how long did it take you to paint your portrait and he said 45 minutes and a lifetime of experience! That kind of thing, that really is what I'm trying to convey to students when they start using OER as well and I was training in school and it's not enough to have identified the resource you have also then got to decide what you are going to do with it? Where does that come from?"

"I'm a great one for 'how to' guides. I love a step-by-step guide. That's the librarian in me probably. But I do like step by step, you know this is how you do it, you know actually showing you, a bit of a show and tell, hands on opportunity, something I could follow, examples of how it's been done."

"Practice I think and just knowing what to look for, how to look for it and also having used them judging the effectiveness of them. So knowing when they're going to be useful and when they're not and having tried out some of the techniques used within those resources whether they work or not for my students and for my discipline."

So your own experience using a variety of different online resources then informs your future use of them?

"Yes absolutely because you can very quickly see that one's not going to be any good for me, I don't want that source I've seen that one before, oh yeah I like this guy let's have a look at what else there is in this particular website or from this particular university or school and so you kind of just get to know, it's like getting to know the library really, which bits you want to go to and which bits you don't and which authors you might want to use and which you don't. It's just getting to know them really."

KNOWLEDGE TYPE FOUR: SELF-REGULATIVE AND SOCIO-REGULATIVE KNOWLEDGE

Self-regulative and socio-regulative knowledge supports educators' understanding of the value of OER both for their own practice and for their students' learning and development. It consists of the meta-cognitive and reflective skills that learners use to monitor and evaluate their own actions and to make sense of and apply the knowledge and expertise they are creating within the varied contexts of their professional practice. Self-regulative knowledge acts as a mediator for combining theoretical knowledge and practical expertise and experience. The findings confirm the relationship between educators' ability to regulate their learning and their ability to learn from and innovate

with OER in their practice. The findings also suggest the importance of the workplace learning environment for structuring both learners engagement with OER as well as their capacity to employ self-regulatory learning traits.

The stages of self-regulatory knowledge align with Wild's 'realisation steps', understanding, need and reflection. In order for educators to translate the content knowledge and expertise they are gaining from learning from and with OER, both in formal and informal settings, requires them first to understand the benefits that OER can bring to them in their role as educators (which encompasses both practitioner and learner) as well as the benefits they offer to their students. Once educators have achieved this basic level of understanding to advance their engagement with and learning from OER they need to recognise the more specific ways that OER can support their practice and contribute to specific areas of need they may have. Wild's final realisation step, reflection, occurs when educators are able effectively and consistently to reflect on and evaluate their engagement with OER and to fuse their theoretical and experiential knowledge within the specific contexts of their professional practice.

Developing high levels of self-regulatory knowledge in educators is important for OER adoption and learning. The more convinced an educator is of the positive influences reusing and repurposing OER has on their practice, the more likely they are to continue to engage in these practices. This requires a sound understanding (encompassing both breadth and depth) of the various roles OER can play and the knowledge and skills necessary to effectively employ them. The construction of self-regulatory knowledge also enables educators to use OER as a means to reflect on and to adjust and improve their teaching practice. It is through the development of self-regulatory knowledge that educators are able to shift their engagement with OER from a supplementary component of their practice to an integral, embedded element of practice.

Self-Regulative and Socio-Regulative Knowledge Scenarios from the Interviews:

"Well as I would do with any resource before I used it I would check it met my learning objectives, check the quality, where it's come from, was it indeed available anyway as an open educational resource, could I use it? In this instance it was very clearly marked up as creative commons with a creative commons licence which for me gives me that badge of authority that it's able to be shared and attributed. So meeting my learning aims and objectives, quality, able to use with attribution, the fact that it was easily accessible to my learners given their backgrounds. Well really anything I would apply to any resource I was ever going to use, the same list if you like of what I need to do. Is it going to meet my needs? Is it going to meet my learner needs more importantly? And is it easily accessible and so forth?"

"Well I think really I ask myself, you know I might find something fascinating, but then I've been studying for donkey's years and it isn't my first year at university or using online learning materials. So I try to put myself in the students' position . . . but I do try and see

KNOWLEDGE TYPE FIVE: SOCIO-CULTURAL KNOWLEDGE (COMMUNITY BASED)

Socio-cultural knowledge may be developed through the creation of OER-related sharing communities for educators. Socio-cultural knowledge is primarily developed through informal learning opportunities that enable educators to interact with other educators around their OER engagement.

The data indicate that engagement with and learning from OER by educators at all levels of experience and expertise is heavily influenced by interaction with other educators in both online and offline contexts. For educators with low levels of engagement with OER, identifying people or sources that they can trust is important to their continued engagement with and learning from OER. For educators with higher levels of engagement with OER the development of socio cultural knowledge through participation in communities can be important in not only supporting their continued reuse of materials but also supporting the re-sharing of resources they create or repurpose in their own practice.

The most beneficial sharing communities are discipline-specific. Educators associate OER use with increasing the efficiency with which they can fulfil their workplace tasks and practice. Therefore, when seeking advice or support from others about OER, they want quick and specific support that is directly related to their immediate needs and contexts of practice. Engaging with people and resources related to their discipline presents learning opportunities that tend to be more closely aligned to their specific needs. Educators are further more likely to engage in knowledge sharing and interaction when they are part of a known, trusted group. The construction of discipline or workplace specific communities can help to support the creation of educator's socio-cultural knowledge.

Socio-cultural knowledge (community-based) Scenarios from the Interviews:

"If I hadn't had the social media and the contacts which I have, I couldn't have been updated in that way which I am and haven't had those contacts because now I can more or less write to anyone in the world and ask them for things…. his peer review system which is

with open educational resources, it's maybe more valuable than others. For example I trust you and you share something with me and then I would like to share it again, but if I don't trust you I will not share what you're sharing. So I mean there is some kind of a self-evaluation built in, in this kind of system which is not present in for example a peer reviewed journals."

"There were sort of technologists and learning developers and people who would meet very regularly. So there was always the opportunity to meet up with people in that sense and I think we also tried to disseminate our findings in journals and at conferences as well and I had the opportunity to discuss aspects of those things there, which was always incredibly useful at looking at what people were actually doing and how they were going about these things in slightly different ways."

"Yeah we have a lot of teachers who are involved in using different sorts of resources, so I think we tend to either meeting up and just talking about things and say 'Oh have you seen this?' or 'Have you used that?'. We have occasional seminars which may also serve as forums where we'll come together and share things that we've come across in the last year that we've started using or thought about using. We have a couple of teachers who specifically do kind of…I don't know what the term is in English, who are on the lookout for useful sites and so on and that collect them or send links to them to other teachers."

KNOWLEDGE TYPE SIX: SOCIO CULTURAL KNOWLEDGE (WORKPLACE BASED)

Workplace learning context is a powerful mediator of educators' ongoing learning. The development of workplace learning contexts that facilitate educators' learning is critical. New knowledge and learning is generated in part through an individual's participation within their context of practice as well as through interaction and engagement with the resources (material and human) available in that context. The learning process and resultant knowledge is shaped by the context(s) in which knowledge is acquired and used. Therefore, educators' engagement with OER is reliant not only on the learning opportunities available to them as individual, independent learners but also the construction of workplaces that support their learning journeys and engagement with OER. The body of knowledge educators develop around their OER use is contextually situated and contextually interpreted. Therefore, as educators move into new workplace contexts, both spatial and temporal, they must adjust their knowledge in order to make it relevant for their new setting.

Educators who consider their workplace to foster a learning context that provides them with greater freedom and flexibility to pursue activities and learning opportunities that will be most beneficial to their specific needs were more likely to engage with OER to support the development of their practice and learning. Similarly, educators who were in workplaces where OER use was encouraged and OER were being used routinely by their colleagues were more likely to engage more OER and to undertake activities that would support their ongoing learning.

Providing guidance on how to develop and structure workplace learning contexts that are supportive of and facilitate educators' ongoing learning with OER would help to promote higher levels of OER use and learning.

Socio-cultural Knowledge (Workplace-based) Scenarios from the Interviews:

"So it's fairly informal and unstructured at the moment, something that I'm kind of thinking about because we're looking at a bit of free organisation in our university at the moment and one of the things we're trying to think about is how could we systematise that kind of thing a bit more and collect what we find to be the most useful resources and make them the most available to our colleagues and so on."

"So in each of our subjects there will be a conference that's just for lecturers and indeed for the course teams and that's a conference where we can share best practice resources and information and moan and whinge a bit, but we can also share best practice. So if people are at a bit of a loss saying 'I've got this vast subject of art in Africa, how the hell am I going to start looking? Where do I start?' pop into the lecturers only conference and you'll be able to post a question and get an answer pretty quickly from someone who's gone through exactly the same problem … It was quite hard going without anyone, there were no best practice forums then, there was no nice bank of online resources for us to work with. Those things now exist, so if I was a brand new tutor coming in now I would feel pretty well supported if I wanted to be with people out there, material out there, sign posts about where I should look, so that I wasn't wasting hours on the vast internet chasing my tail."

"It would be most relevant if it was colleagues at this university because it would be other people in similar situations to me. There wouldn't be an awful lot of point in having a bank of resources that was from people who were in a brick university because when I was at the conference last month the kinds of things that were issues for people in brick universities were totally different to our issues. So whilst some of the resources could theoretically be applied or useful, there's no point in some because it's a differ situation."

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