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## Rethinking professional learning in higher education: a study on how the use of Open Educational Resources triggers the adoption of Open Educational Practice

### Journal Item

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Open and Interdisciplinary  
Journal of Technology,  
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*Special issue*  
Reshaping professional learning  
in the social media landscape:  
theories, practices and challenges

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& *Maria Ranieri*

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*Publisher*

Progedit, via De Cesare, 15

70122, Bari (Italy)

tel. 080.5230627

fax 080.5237648

info@progedit.com

www.progedit.com

qwerty.ckbg@gmail.com

http://www.ckbg.org/qwerty

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# Indice

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<i>Editorial</i>	
Stefania Manca, Maria Ranieri	5
<i>Teachers' reshaping of professional identity in a thematic FB-group</i>	
Mona Lundin, Annika Lantz-Andersson, Thomas Hillman	12
<i>Educating social scholars: examining novice researchers' practices with social media</i>	
Christine M. Greenhow, Benjamin Gleason, Holly Marich, K. Bret Staudt Willet	30
<i>Rethinking professional learning in higher education: a study on how the use of Open Educational Resources triggers the adoption of Open Educational Practice</i>	
Heli Kaatrakoski, Allison Littlejohn, Nina Hood	46
<i>#any use? What do we know about how teachers and doctors learn through social media use?</i>	
Alison Fox, Terese Bird	64





# **Rethinking professional learning in higher education: a study on how the use of Open Educational Resources triggers the adoption of Open Educational Practice**

*Heli Kaatrakoski\*, Allison Littlejohn\*\*, Nina Hood\*\*\**

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## **Abstract**

This study explores how the practices of higher education educators evolve towards open educational practice (OEP) as they use open educational resources (OER) as a form of social media. Drawing on the theories of self-regulated learning (SRL) and cultural-historical activity theory (CHAT), the study provides a novel way of analysing learning and development at work by focusing on related tensions. The interview data were, firstly, analysed by a thematic categorisation of six sub-categories of self-regulated learning and, secondly, by using the method of discursive manifestations of contradictions. The findings evidence that educators find that their OEP does not fit easily within the current educational system. They have to balance conventional forms of education at scale with new and emerging open forms of education. This creates tensions indicating that educators need support in evolving their educational practice towards OEP and to reflect on what this change means for their practice.

**Keywords:** higher education, change in practice, open educational resources, social media, self-regulated learning, cultural-historical activity theory

\* The Open University, UK; University of Finland, Finland.

\*\* The Open University, UK.

\*\*\* University of Auckland, New Zealand.

Corresponding author: Heli Kaatrakoski, heli.kaatrakoski@gmail.com

## **1. Introduction**

Due to rapid societal changes, the co-evolution of work, learning and technology has become an emerging area of interest in the professional learning literature (Ludvigsen, Lund, Rasmussen, & Säljö, 2010). Today, professional learning is increasingly perceived as an ever-present and continual practice that occurs through customary work (Collin, Sintonen, Paloniemi, & Auvinen, 2011; Hager, 2004). It is becoming a critical dimension of work that supports increased specialisation, new forms of organisation and agile transformation of work outputs (Littlejohn & Margaryan, 2014).

One specific area where work, learning and technology are co-evolving is in the development of Open Educational Practice (OEP), where professionals develop new practices around the use of social media and social networking resources (Okada, Mikroyannidis, Meister, & Little, 2012). The first major social media sites were launched about 20 years ago with objectives of supporting existing social networks or creating new connections and sharing online material (boyd & Ellison, 2007). The primary function was inter-personal interaction, but with an element of sharing material.

Social media, broadly defined, encompass Open Educational Resource (OER) and other services that are Web 2.0 Internet-based applications and facilitate development of social networks, which are the mechanism through which most OER are disseminated and shared. Further, in social media much of the content is user-generated and individuals and groups can create user-specific profiles (Kaplan & Haenlein, 2010; Obar & Wildman, 2015). OER were developed and launched about 15 years ago for purposes of offering digitised materials freely and openly for educators, students and self-learners (OECD, 2007). The Cape Town Open Education Declaration (Open Society Institute & the Shuttleworth Foundation, 2008) suggests OER give educators potential to adopt new approaches around sharing and collective learning; motivate novel ways of thinking about content; and offer new learning opportunities in education. The primary focus of OER tends to be on person to resource interaction, but these are infused with objectives of learning and creating inter-personal connections and networks.

'Big OER' are OER often associated with institutional resources with explicit learning content (Weller, 2010). Small scale resources, 'little OER', do not necessarily have explicit learning aims. They are produced by individuals using Web.2.0 based services and shared through third party sites outside of institutional platforms (e.g. YouTube, SlideShare and Flickr) (Weller, 2010). Creative Commons' 'Free to Learn Guide' (CC Wiki, 2011) explains: "As emerging technologies create new tools and ways of organizing and sharing data, the variety of OER and platforms for delivering them will change as well. Similarly, as students adopt new technologies such as texting, social networking and portable devices, new opportunities for providing OER in familiar formats will develop".

Considering the evolution of OER from institutional platforms, 'big OER' toward 'little OER', as well as the adoption of new technologies and formats, this paper positions OER as part of social media. The use of OER requires new forms of professional practice. A study of a large-scale, government-funded programme of work in the UK to mainstream Open Educational Resources (the Jisc OER programme) first examined the adaptation of educational practice necessary for the adoption and use of OER in mainstream education and has been explored in further studies (McGill, Falconer, Dempster, Littlejohn, & Beetham, 2013). However, little is known about the ways educators learn OEP and in particular how these forms of practice evolve through informal learning intertwined with everyday work. This study examines higher education educators' learning when adopting OEP with specific focus on the use of OER. OEP has been commonly defined to encompass: production, management, use and reuse of resources; construction of new pedagogies; and construction of learning practice (Open Society Institute & the Shuttleworth Foundation, 2008).

Studies on OER show that professional learning and development requires the development of different types of knowledge, reimagining each individual's learning practice (socio-regulative knowledge) as well as the sociocultural context in which their practice is embedded (sociocultural knowledge) (Littlejohn & Hood, 2017; Tynjälä, 2013). Failure to utilise OER and OEP by educators can be traced to both



individual level (Littlejohn & Hood, 2017; McAndrew, 2011) and institutional level (Carey, Davis, Ferreras, & Porter, 2015; Kaatrakoski, Littlejohn, & Hood, 2017).

The study forms part of a larger study examining educators' professional learning through the use of OER (<http://www.exploerer.gu.se/>). Drawing on two theories of learning, self-regulated learning (SRL) (Zimmermann, 2000) and cultural-historical activity theory (CHAT) (Engeström, 1987; Leont'ev, 1978; Vygotsky, 1978), it enriches studies of social media, OER, OEP, SRL and CHAT and provides a novel way of analysing learning at work.

A number of tensions between established and emerging education practice have been identified through earlier studies (Cox, 2016; Littlejohn, Falconer, McGill, & Beetham, 2014). Our previous research used the CHAT framework to identify tensions and analyse how educators' use of OER triggered the evolution of new forms of professional practice (Kaatrakoski et al., 2017).

This present study further analyses the changing practice of higher education educators by posing the following question: What challenges do higher education educators face as their teaching and learning practice evolves towards OEP?

The analytical framework of discursive manifestations of contradictions (Engeström & Sannino, 2011) is used to reveal underlying challenges educators express in their narratives while trying to make sense of the emerging practice (Engeström, 1999).

## **2. Theoretical background**

### **2.1. Self-regulated learning**

Self-regulation refers to the 'self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman, 2000, p. 14). Individuals' self-regulative behaviour is not static, but may vary in accordance with changing individual and contextual factors. Individual feelings or opportunities to collaborate may motivate people to participate in situations supporting their professional practice (Pintrich, 2000).

Theories of self-regulated learning have primarily been developed in formal educational settings, even though self-regulation potentially has a stronger effect in informal workplace settings, where individuals are expected to take greater responsibility for their learning (Sitzmann & Ely, 2011). Recent studies suggest that also institutions as whole, need to expand the types of knowledge they adopt and evolve their practice in situations of change. Socio-regulative knowledge and socio-cultural knowledge is needed in learning practice, but is sometimes overlooked in favour of theoretical and practical knowledge (Hood & Littlejohn, 2017; Tynjälä, 2013).

## **2.2. Cultural Historical Activity Theory**

Cultural-historical activity theory (CHAT) conceptualises human activity as object-oriented, mediated, collective and social (Engeström, 1987; Leont'ev, 1978; Vygotsky, 1978). Leont'ev's theory suggests that when studying psychological processes, the analysis cannot be isolated from social relations and societal life (Leont'ev, 1978). A framework can be used to support the analysis of an individual's actions within the social context.

CHAT is a dialectical theory which has the idea of 'contradictions' as a key concept. Contradictions have inherently opposing elements embedded within them. These are systemic and historically evolving and are a driving force for change (Il'enkov, 1977). Empirically identified tensions and conflicting situations are understood as manifestations of structural and systemic contradictions that drive change (Engeström, 1987; Il'enkov, 1977). A number of studies have used CHAT to analyse work-related tensions and contradictions with the aim of providing solutions for a way forward (Bagarukayo, Ssentamu, Mayisela, & Brown, 2016; Engeström & Saninno, 2011; Kaatrakoski et al., 2017).

## **2.3. Discursive manifestations of contradictions**

Contradictions cannot be observed directly or empirically analysed, but can be traced through the ways they appear in practice. Linguistically expressed 'manifestations of contradictions' are evidenced through patterns of discussion in which individuals try to make sense

of, to resolve these contradictions (Engeström, 1999). Therefore, by analysing contradictions in the context of change and emerging practice, we can enhance our understanding of the tensions professionals experience through their actions.

In this study, we use Engeström's and Sannino's (2011) framework for analysing four types of discursive manifestations of contradictions: dilemmas, conflicts, critical conflicts, and double binds. Dilemmas are defined as 'expressions of incompatible evaluation'. They appear in discourse as contrary themes. Linguistic cues for identifying these dilemmas include 'on one hand, on the other hand', and 'yes, but'. Dilemmas can be reproduced with help of denial and repetition, rather than being resolved through the narrative. For example, 'I didn't mean that', 'I actually meant' refer to the repetition and emphasis of an expressed dilemma, rather than as a solution to this dilemma.

Conflicts typically appear in the form of resistance, disagreement, argument or criticism, and are often indicated through negative expressions, such as 'no', 'I disagree' and 'this is not true'. Resolution of conflicts includes compromising or submitting to the situation dominated by authorities or majority.

Critical conflicts express feelings of helplessness, guilt and violence caused by contradictory motives experienced by different people. Resolution of critical conflicts occurs by negotiating a new meaning of the original situation.

Double binds are situations in which actors repeatedly encounter equally unacceptable alternatives or impossible situations. Typically, the situations call for urgent collective actions to be resolved. Rhetorical questions and the use of the first person plural (we), indicate double binds. The resolution of double binds requires collective action.

### **3. Methodology**

This study took place in two phases. The first phase involved a qualitative survey of adult educators' learning, exploring how they use OER. The survey instrument was a slightly modified version of a published, validated instrument measuring recent workplace learning activities (Fontana, Milligan, Littlejohn, & Margaryan, 2015). The survey was

distributed via email lists and social media sites and a total of 521 adult educators responded to the survey. Exploratory factor analysis identified six factors of self-regulated learning relevant to OER use: experimenting in practice, planning and goal setting, self-efficacy, self-reflection, interaction with others, and learning value (Hood & Littlejohn, 2017).

The second phase was a qualitative study. Survey respondents were invited to participate in an interview about how they used OER and learned and engaged with OEP. Thirty educators, from eight countries, were interviewed by a single interviewer via Skype. Interviews followed a semi-structured interview schedule and lasted between 45 and 60 minutes. Interviews were audio recorded and transcribed verbatim. The interview transcripts were imported into Atlas.ti for the qualitative analysis. The data were, first, categorised into previously identified six sub-categories of self-regulation of learning (Hood & Littlejohn, 2017). Second, a linguistic-thematic analysis of the discursive manifestations of contradictions (Engeström & Sannino, 2011) was conducted. The coding was conducted by one researcher and the reliability was not measured after the coding.

## **4. Results**

### **4.1. Quantitative distribution of the sub-factors of self-regulated learning**

631 quotations were pinpointed that were associated with the six specific sub-factors of self-regulated learning previously identified as having an influence on educators' learning of OEP. The sub-factor most frequently mentioned was 'experimenting in practice' (160). 'Self-efficacy' (114), 'self-reflection' (115) and 'interaction with others' (105) were in the mid-range of frequency. 'Planning and goal setting' (60) and 'learning value' (77) had the fewest number of occurrences.

### **4.2. Quantitative findings of dilemmas, conflicts, critical conflicts and double binds**

Manifestations of contradictions were identified across the data and were expressed by all 30 of the educators. We identified 105 dilem-

mas, 43 conflicts, 15 critical conflicts and 9 double binds within 631 sub-factors of self-regulated learning quotations. Table 1 summarises the distribution of the coded quotations of the sub-factors of self-regulated learning related to manifestations of contradictions. Table 2 presents the distribution of the number of educators who expressed contradictions related to each of the sub-factors of self-regulated learning.

**Table 1.** The distribution of coded quotations of the sub-factors of self-regulated learning related to manifestations of contradictions

	Dilemma (quotations)	Conflict (quotations)	Critical conflict (quotations)	Double bind (quotations)	Total
Experimenting in practice	23	12	5	3	43
Interaction with others	16	8	2	3	29
Learning value	9	4	3	1	17
Planning and goal setting	13	4	–	–	17
Self-efficacy	30	9	5	1	45
Self-reflection	14	6	–	1	21
Total	105	43	15	9	172

**Table 2.** Distribution of the number of higher education educators expressing contradictions related to each sub-factor of self-regulated learning

	Dilemma	Conflict	Critical conflict	Double bind	Total
Experimenting in practice	10	7	5	3	25
Interaction with others	14	5	2	3	24
Learning value	7	2	3	1	13
Planning and goal setting	9	4	–	–	13
Self-efficacy	10	9	3	1	23
Self-reflection	13	9	–	1	23

### **4.3. Qualitative findings of manifestations of contradictions**

The analysis provided rich insights associated with a variety of challenges around OER and OEP. The challenges raised most often were around assessment, quality assurance and the sharing of OER.

#### **4.3.1. Specific practice related to discursive manifestations of contradictions**

The identification and use of relevant material is a widely-addressed issue related to the use of OER. The following example of experimenting in practice and conflict illustrates that the interviewee does not utilise other educators' resources in his teaching. The quote also reveals that he is aware that students use them.

What we don't really do [...] is draw upon educational resources that other people have created for universities and for students and have put online. Although students do find them for themselves and we noticed them swapping notes about YouTube tutorials that somebody has found, such as a university or lecturer has posted somewhere else, you know maybe the other side of the world and they say 'Oh this is really interesting, it's better than the course material we've been provided with' and they go away and look at that and I say good luck to them, but to be honest when I look at it I don't see what's better about that, I think perhaps because it's just different it feels that it must be better.

This quote illustrates a conflict between what the educator considers relevant teaching and learning material and what learners might consider good and interesting. The educator fails to identify an opportunity to bring together his and learners' viewpoints and turn the process of students sourcing OER into a way to augment their learning (Kaatrakoski et al., 2017). Instead, he views the situation as conflicting with the 'authentic' learning and teaching processes. He is stuck with conventional teaching methods and does not recognise the potential that OER offer.

Another example of experimenting in practice is evidenced through a critical conflict. The educator expresses her frustration about poor communication with learners, the participation of learners in formal learning settings and their use of social media.

Although I email them and say please respond and tell me you've seen this email, they just don't reply, they just ignore it and all I'm getting from them is if they send a TMA [tutor marked assessment] in. (...) it's a shame because if they would join in [name of a platform], for example you can put all sorts of stuff on the whiteboard for them to discuss, but they just don't turn up and so they're missing a lot. (...) The other thing that's interesting is at least two of them have said that they've got a Facebook group of [name of the organisation] students and they're doing stuff on Facebook but we've got no idea what they're doing.

Here the educator suggests that even sharing material and information does not seem to motivate learners to participate in formal teaching and learning. Learners do not engage with the tools and resources provided for them, but instead create their own space for learning. The educator conceptualises this teaching situation in a similar way to how she views conventional teaching practice within a physical space. She cannot view this situation and resolve it within the context of new and emerging OEP within technological platform.

Another educator, who did not express any manifestations of contradictions, explained that 'students may well be communicating a lot by Facebook, but we don't know about that!'. These narratives hint of the potential to bring together teachers' and learners' space and forums in a more systematic way (see Bowman & Akcaoglu, 2014).

The last excerpt represents a double bind in 'experimenting in practice'. At first, the educator describes what he considers a good practice around OER: how YouTube can be used to help to share resources. However, he then expresses a challenge in sharing of teaching and learning material.

(...) and they've made them [videos] available to all the tutors and all the students on the course and that is brilliant. So that's actually OER working and in fact because the [name of the organisation] has none of its own space for us to use, they're all on YouTube. (...) within a closed community OER maybe works quite well and maybe it's this idea, this sort of dream that we have that somehow, I ought to be able to type in some key phrases and Google will immediately find some great materials that are exactly what I need that I won't need to rewrite. That kind of dream maybe can't ever happen because

of the nature of teachers, is a problem there. (...) I think that teacher culture is a huge barrier (...) You know as opposed to trainers, we're creatives, you want to feel that that lesson that you came up with is yours. Some of us that feels the need to be creative and in fact partly we feel failures if we can't produce our own stuff.

In his view, the prevailing teaching culture impedes the full potential of OEP. This experience was at personal level, but requires a solution at the organisational or institutional level. Profound changes in practice are typically slow and the responsibility cannot be left to the practitioners alone.

#### **4.3.2. Societal context related discursive manifestations of contradictions**

No practice can be explored in isolation from the societal context. In our analysis double binds (in particular) and critical conflicts revealed key challenges that need to be addressed within the wider context of educators' practice.

Some interviewees were concerned about the limited organisational or institutional support in encouraging the use of OER. In the following example, focused on learning value and related critical conflict, the educator explains that at his institution the benefits of the virtual learning environments (VLE) have not yet been fully recognised by educators or management.

(...) I've seen some VLEs which are just very bland because the lecturers don't consider online learning to be, they see it as a sort of secondary supportive feature and not a very important one of their practice and I don't agree with that, I think it's the other way around. (...) It's unbelievable isn't it, you know. I'm a bit surprised that it's still playing second best in higher education to be honest because I think that's what it is and I think a lot of people don't understand, people at the top, don't understand what it's all about.

The educator begins by explaining that some people conceptualise online learning as a form of inferior practice, which impacts on the evolution of the use of OER and OEP. In his view online teaching is understood by many practitioners as a tool used to supplement face-



to-face teaching and learning, rather than as a 'real' form of practice in its own right. He expresses his frustration and cannot suggest a solution, but refers to 'people at the top', who should be the key agents of change. Using OER and any online resources can be a huge change if these resources are not used only as tools, but as a way to trigger a transformation in practice.

The last excerpt is an example of an interaction with others and is a double bind. It relates to perceptions of OER as 'commercial' and 'non-commercial' products.

You can stick an iPad or iPhone onto the machine (...) and records what you are doing (...) And then you can take that and put it on a Moodle site or something like that. Now that sounds cool doesn't it and you think I would like one of those. Now what's happening of course is that I don't have the time to try it out yet and where do you find out about all these thousands and thousands of things? Well from OER but now I've been able to access somebody's blog who has used one and that has triggered of something that I put onto a Facebook group which is read all over Scandinavia and somebody then has gone and bought one and soon they will put up a review and maybe a couple of films to look at and that is a very typical process with OER, and look at this as a commercial produce and you buy it from Amazon UK but there is a point at which you say where do you actually put the dividing line between the commercial product and the dissemination of the commercial product and that's very much where OER comes in for me as well!

This educator provides a short narrative of a new product and an imaginary decision-making process to buy it. The process includes following what other people have done with the product and their assessment in social media. What bothers this educator is the boundary between commercial products and raising awareness of commercial products with the help of OER. This sort of confusion cannot be solved at the personal level.

One other educator also raised this tension between the commercial versus non-commercial aspects of OER. She explained that educational publishers prefer opening access to materials that is considered less valuable, whereas material that has high sales potential, or is otherwise of high quality, will remain under copyright.

#### **4. Discussion and conclusions**

This paper explores challenges expressed by higher education educators when using OER as a form of social media in a changing educational landscape. We analysed educators' narratives by using the framework of discursive manifestations of contradictions (Engeström & Sannino, 2011). We identified a number of tensions educators encounter as they change their practice and try to make sense, transform and resolve these tensions as part of a dynamic learning process (Engeström, 1987).

This study evidences the tension between conventional and emerging OEP that evolve in response to the adoption of OER. We found evidence that some educators are trying to strike a balance between, on the one hand, standardized forms of education at scale and, on the other hand, personalized and collaborative forms of education enabled through the implementation of OER.

OER are often suggested as a way to create an 'economy of scale' in education (Littlejohn, 2003), with each OER potentially reused many times by different educators and students across various institutions. According to Victor and Boynton (1998) a key characteristic central to 'economy of scale' is that knowledge is stored 'in the head of people within an organisation' and workers perform tasks that are defined by management (Pihlaja, 2005). Thus, knowledge and skills are transferred from management to employers.

Victor and Boynton's (1998) model of forms of work and related learning focuses on production, but it has also been applied in analysing academic library work (Engeström, Rantavuori, & Kerosuo, 2013) and can assist in understanding changes in work and in education. In educational settings, production of scale would mean that management defines the objectives of education and educators transfer knowledge and skills to learners within the rules handed to them by the management. They use tools, including digital resources and platforms, to disseminate resources for learners who can actively use these materials, but are not necessarily in charge of producing or selecting the medium for processing them.

Efficiency of communication and the form of one-way communication between instructors and learners in the educational context is

present in educational practice, in particular in mass lectures (Bowman & Akcaoglu, 2014). Despite the prevailing conventional practice, instructors are increasingly turning to out-of-class communication groups to ease interaction with learners, encourage learners to be more active and create partnerships with learners (Cunha, van Kruistum, & van Oers, 2016). This study provided clear evidence that the idea of teachers ‘delivering’ education through the transfer of information and knowledge to learners is being replaced with a view of learners as active participants in their own learning.

The analysis also surfaced tensions associated with the perception of OER in education. Some educators who engage in OEP perceive that management underestimate the potential of OER to transform educational practice, deferring to known forms of practice where OER are considered ‘content’ resources that are ‘delivered’ to students as a basis of commercialism.

Transformational change in the use of OER and the development of OEP requires an understanding of the whole activity (Engeström, 1987). OER have the potential to radically change the character of practice in education, pushing the sector toward more collaborative change organised as co-configuration. However, current forms of professional development tend to focus on instructing educators in how to use OER and digital tools, with little regard for how the use of these resources disrupts their practice. Educators need support in evolving their educational practice towards OEP by allowing them to feedback what this change means for their practice and figuring out how to meaningfully move forward. “Guidelines for structuring learning and teaching opportunities relevant to educators’ open educational resources (OER) engagement” (Littlejohn & Hood, 2016) is an example of guidelines that have been developed to facilitating educators’ learning within evolving open practice.

This study brought up important insights associated with dynamics of educators’ changing practice, but it also has a number of limitations: 1) the use of thematic categorisation that can simplify the narratives of educators; 2) the use of the method of discursive manifestations of contradiction that was developed to analyse group discussions; 3) coding conducted only by one researcher; and 4) lim-

ited dialogue between the theories of self-regulated learning and cultural-historical activity theory. We suggest further empirical research to conceptualise and develop educators' new evolving open practice. During the research process we also identified a need to retheorise OER as a form of social media.

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