

ORIGINAL RESEARCH ARTICLE

Becoming an open educator: towards an open threshold framework

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(Received: 20 September 2019; Revised: 5 December 2019; Accepted: 10 February 2020; Published: 9 March 2020)

In this article, we propose a cross-pollination of two prominent lines of educational thought: open education (OE) and threshold concepts (TCs). Open education has gained an increased profile through the growing popularity of open educational resources (OER) and massive online open courses (MOOCs). Educators who create or make use of such resources, or employ related open educational practices (OEP), are often suggested to have a transformative impact in educational settings. In recent years, educational research has increasingly discussed learning as a process of attaining or crossing certain conceptual thresholds, which involve such a significant shift that the learner eventually achieves a different and deeper understanding of core disciplinary knowledge, even a new identity. Of the eight characteristics of TCs identified in the core literature of this theory, we consider that three in particular offer the maximum potential for understanding the evolution of teachers towards the open educator identity: transformative, troublesome and liminal. This work presents a theoretical framework that includes the transformative impact on identity in the process of becoming an open educator, the troublesomeness inherent in this evolution and the liminal space through which the evolving teachers progress. It is argued that a focus on the development of open educator identity aligns with current reflective approaches to working on teachers' professional identity, and at the same time supports a focus on teachers' commitment to a democratic approach to education, which is necessary in neoliberal times.

Keywords: open education; threshold concepts; open educator; teachers' identity; open educational practices

Preamble

This article is a result of a genuinely open research collaboration, originated by a request for help by one of the authors, who had proposed a session but was not able to attend the OER18 conference in April 2018. OER18 was the ideal community of open practice within which to seek support, and this started an exchange of ideas, which

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broadened and deepened the original research proposal. We started with a rough diamond, which was faceted by the newly formed team and began to be polished as we discussed, debated and collaborated.

Through this iterative process, we have attempted to move towards a deeper understanding of a less-discussed element of open education (OE), trying to answer the following questions: who are open educators, and what is the difference between those educators who embrace openness in their working practice and those who do not? We do not claim to have fully answered these questions yet, but we have documented our ongoing work towards improving the resolution of this picture. This article is partly based on literature review, partly on experimental activities, and to some extent it is a work-in-progress towards future empirical research.

Introduction

In this article, we propose the cross-pollination of two prominent post-millennial lines of educational thought: open education (OE) and threshold concepts (TCs). Open education is an *umbrella term* covering a wide range of practices and content types (Weller 2014), which has gained particular prominence in recent years, buoyed by a rising tide of open content in the form of open educational resources (OER) since 2002, and subsequently, the boom in massive open online courses (MOOCs). Latterly, some OE scholars have turned their attention to discussions of ‘open educational practices’ (OEP), thereby recognising a wider range and longer history of activities which ‘open’ aspects of education, as well as openness of content (Cronin 2017; Cronin and MacLaren 2018; Havemann 2016; Havemann 2020). While scholarly literature on OE deals extensively with its objects (e.g. OER, MOOCs), and more recently also with its practices, the question of who an *open educator* is, and how someone becomes one, has been less researched (Nascimbeni and Burgos 2016).

During a similar period, educational research has been alive with discussion of learning as a process of grasping certain TCs, also understood as attaining or crossing conceptual *thresholds*. The body of literature that has addressed and elaborated upon the notion of TCs (which we refer to below as TC theory) has built upon the work of Meyer and Land (2003, 2005) who suggested that particular concepts are so essential to mastery of a subject that learning them is ‘akin to a portal, opening up a new and previously inaccessible way of thinking’ (2003, p. 1). The intuitive appeal of TC theory as an analytical framework is that it resonates with learners’ and teachers’ observations that some core assumptions seem harder to teach and harder to learn (Meyer and Land 2003; O’Brien 2008), and may consequently become a cause of frustration and ‘stuckness’ (an inability to progress). This is because while TCs play a pivotal and unifying role within a body of knowledge, they are often perceived by learners as problematic, as they may initially seem counter-intuitive and to challenge pre-existing epistemic assumptions (Perkins 2006, 2008; Zepke 2013). Their acquisition is thus frequently associated with a particularly significant period of liminality, during which learners may mimic essential beliefs and approaches with little comprehension before eventually becoming able to properly understand and apply them (Cousin 2006; Land, Rattray, and Vivian 2014; Marsh and De Luca 2016; Meyer and Land 2005), at which point ‘a qualitatively different view of the subject matter’ is attained (Meyer and Land 2003, p. 4). As we shall discuss further, TC theory proposes that the assimilation of new, previously inconceivable knowledge is fundamental to a person’s sense of identity, as well as to group membership.

That these two lines of educational research appear not to have ‘met’ so far perhaps reflects the fact that, whereas the discussion of TCs is typically located within a particular discipline¹, discussions of OE are, by their nature, inter- or meta- disciplinary, which suggests that the application of TC theory to this context may not be unproblematic. Our core aim, in seeking to introduce a TC lens into OE, which has received very little attention² is to put to work those aspects of this theory which might best assist an exploration of the under-researched impact of opening up aspects of teaching upon philosophical and political beliefs and attitudes, knowledge and practices, and eventually identity.

Discussions of identity can raise new questions as quickly as answering them: for example, we cannot assume homogeneity of experience or perspective across the wide category of educators or even within diverse subgroups, such as teachers in schools or academics who teach in higher education. At this stage, we wish to place ‘on hold’ some issues that we believe can best be explored empirically, in order to focus on assembling a framework that would enable such studies. Indeed, we note from the outset that the very concept of *open educator identity* that we are focusing on is made more complex by the difficulty of defining exactly what ‘open education’ itself means.

Openness of content, practices and identity

Openness has a pre-digital history, in education as in other domains (Pomerantz and Peek 2016), but presently, the phrase ‘open education’ tends to be used with reference to openings of content and practice which are achieved through digitalisation (Have-mann 2016). OER and MOOCs represent salient examples, but networked modes of learning, teaching and scholarly activity can also be considered relevant aspects of OEP. However, as Cronin and MacLaren (2018) note, “‘Open education’ often carries the weight of describing not just policy, practices, resources, curricula and pedagogy, but also the values inherent within these, as well as relationships between teachers and learners’ (p. 217).

In contrast with some rather narrow, content-focused usages of OEP to indicate simply ‘OER-based practices’, as remarked by Beetham *et al.* (2012) and Cronin (2017), among others, wider definitions of OEP have sought to make connections among a diverse range of practices. Andrade *et al.* (2011) suggest that OEP ‘promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path’ (p. 12). According to Cronin (2017), OEP are regarded as ‘collaborative practices that include the creation, use and reuse of OER’ but also include ‘pedagogical practices employing participatory technologies, and social networks for interaction, peer-learning, knowledge creation, and empowerment of learners’ (p. 18). Havemann (2016) suggests that the concept of OEP can usefully be thought of as a kind of lens through which educational practices can be examined, in which case the use of the term:

seeks to frame considerations of how and why people choose to author and learn with open resources, and the practices involved in their selection and modification;

¹Matthew Flanagan maintains a list of disciplines that have been addressed through the TC lens, and among which there has been little crossover with open education: <https://www.ee.ucl.ac.uk/~mflanaga/thresholdsT.html#oer>

²Based on the complete list of disciplines addressed through the TC lens: <https://www.ee.ucl.ac.uk/~mflanaga/thresholdsT.html#oer>

but also, importantly, to direct attention to practices that are less about resources; that instead act to open educational spaces, or open other spaces *for* education. (p. 5)

In these definitions, OEP is positioned as inclusive of both open content and other means of opening. A further implication, we suggest, is that openness is not simply a value-neutral affordance of the application of networked digital technologies in educational contexts; openness should instead be understood as a strategy in service of an underpinning mission or ethos.

The recent turn to *practices* in the OE literature, achieved by looking through this OEP lens, has inaugurated a shift of focus from openness as a property of a thing, such as an institution or an item of content (open as what something *is*) towards a notion of openness as inherent in practices and processes (open as something someone *does*). But so far, the notion of openness *as a quality of educators themselves* has been generally less discussed (Nascimbeni and Burgos 2016). That is to say, although usage of terms such as ‘open educator’ and ‘open practitioner’ has become commonplace in the OE community, we suggest that there is more to explore to determine what characteristics constitute an open educator, and additionally, whether and how educators might come to recognise themselves with such a label. At the heart of this research, therefore, the question we pose is: if the open educator is a meaningful descriptor of a kind of identity, then can looking through another lens – that of TC theory – assist us in understanding how an educator takes it up, or transitions into it? In order to develop a framework for the exploration of these issues, we first identify key elements of TC theory and then review these in relation to a broad conception of OEP, in which it is construed as not simply *a collection of*, but also *an orientation towards*, educational practices.

Identity and thresholds

In this section, we consider the relevance of the ‘threshold lens’ to the task of thinking through transformations of identity. Identity has been defined by Gee (2000, p. 99) as ‘the “kind of person” one is recognised as “being”’, which is seen as both an ‘internal state’ and to be manifest in ‘performance in society’; as such, it is unstable and ambiguous. For professionals (such as teachers), identity is said to develop through complex processes in which professional norms and values are integrated into one’s own personal concept of self (Ng, Nicholas, and Williams 2010; Shlomo, Levy, and Itzhaky 2012). Professional identities therefore include ‘attitudes, values, knowledge, beliefs and skills’ (Beddoe 2013, p. 27) that are both common among professional colleagues and different from those of other groups. TC theory suggests that such identities, which are founded on shared expertise and experience, are the product of an evolutionary process which involves the acquisition of key and challenging facets of specialist knowledge (Meyer and Land 2005) in which the learner changes their view of the knowledge and themselves, alongside the acquisition of the new group membership (Keefer 2015; Kiley 2009; Kiley and Wisker 2009, 2010).

For Turner, such rites of passage consist of an evolution in three phases, moving from separation, through margin or limen, to aggregation (Turner 1979). A key argument of TC theory is that TCs play a central role in this process, facilitating the ‘transformative insights’ (Marsh and De Luca 2016) that provide ‘cognitive gateways’ (Gourlay 2009) to ‘new and previously inaccessible ways of thinking and practising’

(Land, Rattray, and Vivian 2014, p. 200). However, the criteria for identifying thresholds remains somewhat elusive, contested and ambiguous (Barradell 2013; Bradbeer 2006; Marsh and De Luca 2016; Quinlan *et al.* 2013).

The initial formulation of the TC framework identified five criteria that these concepts appeared to have in common (Cousin 2006; Land *et al.* 2005; Meyer and Land 2003, 2005). First, they are *transformative*, facilitating an ontological shift in knowing and being which results in conceptual, affective and performative changes. Second, they are *irreversible*, as once learned, they are unlikely to be forgotten and can only be unlearned with difficulty. Third, they play an *integrative* role within a field, meaning that they cannot be understood in isolation, and often reveal hidden connections between and interrelatedness among other concepts and phenomena. Fourth, they are *bounded* in the sense that their use might signal the boundaries of a discipline or community of practice. And finally, they are *troublesome*, particularly in the sense of being conceptually difficult, as TCs were often found to invoke tacit assumptions that are particularly challenging for students with conflicting worldviews.

As TC theory has been applied more widely, additional criteria have been proposed, which place greater emphasis on learner subjectivity and on the affective rather than conceptual dimension of the TC framework (Baillie, Bowden, and Meyer 2013; Barradell 2013; Cousin 2006; Meyer 2012; Quinlan *et al.* 2013). Of these, the most widely adopted supplementary criteria appear to be that TCs are considered *reconstitutive*, leading to shifts in identity and a transfiguration of self; *discursive*, incorporating linguistic and symbolic qualities particular to a community of practice and *liminal*, focusing on the connection between TCs and the rites of passage that signal participation and status within a community of practice.

While there are now therefore eight widely-discussed criteria for identifying TCs, it is apparent that there are both areas of overlap between them, and also no agreement on how many of the nominated criteria must necessarily be 'detectable' in order to confidently identify a TC. Much of the research on TCs has focused on learning and teaching in undergraduate-level higher education (Marsh and De Luca 2016; Meyer and Land 2005), and this body of work consequently situates and examines TCs in relation to particular disciplines (Bradbeer 2006). In contrast, another key group of studies has focused on the doctoral journey towards the development of a researcher identity, and therefore proposes that TCs need not necessarily be bound to particular disciplinary knowledge, but relate instead to the transformative effects of progress through a particular stage of development (Cousin 2006; Humphrey and Simpson 2012; Keefer 2015; Kiley 2009; Kiley and Wisker 2009, 2010; Meyer and Land 2005; Trafford and Leshem 2009; Wisker 2006, 2015; Wisker, Kiley, and Aiston 2006; Wisker and Robinson 2009). Indeed, as TC theory has migrated to new contexts, it is clear that it has been reimagined and evolved in various ways.

TC theory thus suggests that particular kinds of knowledge and practice are essential, not just in the cognitive organisation of particular fields (Marsh and De Luca 2016; Zepke 2013), but also that their acquisition is critical to the ability to form an identity as a member of a particular community of practice (Gourlay 2009; Meyer and Land 2005, 2006; Waite *et al.* 2013; Wenger 1999). Furthermore, a variety of authors have suggested that a focus on *concepts* alone might be rather narrow, and that 'thresholds' might also be usefully described as *capabilities*, *skills*, *experiences* or *practices*, any of which might also indicate ways of thinking, practising and being which act to signal membership of, or changing status within, a community of practice (Baillie, Bowden, and Meyer 2013; Foley 2014; Gourlay 2009; Land *et al.*

2005; Thomas *et al.* 2014). The idea of *threshold practices* in particular, assists us in paving our proposed path from TC theory towards the ‘shadowy figure’ of the open educator.

Open practices as threshold practices

In this section, we discuss OEP as ‘threshold practices’ which we understand as constitutive, as well as expressive, of an identity as an open educator. Nascimbeni and Burgos (2016) have defined the open educator in relation to how such educators operate across the key realms of teaching activity: developing open learning designs, making usage of open educational content, adopting open pedagogic approaches and designing open assessment practices. They state:

An Open Educator chooses to use open approaches, when possible and appropriate, with the aim to remove all unnecessary barriers to learning. He/she works through an open online identity and relies on online social networking to enrich and implement his/her work, understanding that collaboration bears a responsibility towards the work of others. (Nascimbeni and Burgos 2016, p. 4).

This description of the open educator embraces a holistic understanding of OEP, and at the same time usefully proposes parallel but distinct dimensions of pedagogic activity in which an educator’s openness can develop. Openness of practice is therefore understood as contextual, and relative, and the degree of openness of an individual educator’s activities might vary considerably across these dimensions. Yet, if this is the case, it also suggests that there is no simple ‘flick of the switch’ or rite of passage that transforms someone into an open educator.

To assist consideration of the nature of the threshold being crossed, we identified a subset of the eight widely-discussed characteristics of TCs which might best inform our discussion. The *transformative* quality of TCs has been described as their utmost indicator (Sanders and McCartney 2016; Yeomans, ZsChaler, and Coate 2019), and accords with our premise that some process of transformation must occur in the process of becoming an open educator. Furthermore, previous research has highlighted the inherent difficulty involved in processing or internalising a TC, which indicates that it represents *troublesome* knowledge (Yeomans, ZsChaler, and Coate 2019); this may go some way to explain why only some educators undergo this shift. We also contend that exploration of the *liminal* characteristic of TCs is fundamental to an understanding of how identity alters in the process of threshold crossing and the contested status that is experienced when one feels ‘betwixt and between’ available identities (Turner 1979).

OEP as transformative

The notion of OEP being transformative accords with pre-existing claims in the OE literature, which position it, beyond simply a set of professional practices, as an ethos and a way of being (Cronin 2017; Neylon 2013). Threshold concepts are considered transformative because they are similarly associated with changes in both knowing and being; as Cousin (2006) suggests, when ‘new understandings are assimilated into our biography, [they become] part of who we are, how we see and how we feel’ (p. 4).

The use of OER has been observed to bring about changes in the teaching role, for example as seen in the work of Tan and Pearce (2012). Furthermore, it has been said that teachers and scholars ‘can shape and are shaped by openness’ (Cronin 2017) and that a transformation of scholarly identity occurs and is enhanced by participation in the practices of the open movement (Veletsianos and Kimmons 2012).

Transformation of the professional educator’s role and identity in the context of OE has been examined by Nascimbeni and Burgos (2016), who framed the evolution of higher education teachers towards the open educator role as involving two significant transitions that affect teachers’ practice with respect to design, content, teaching and assessment. In terms of learning design, teachers typically progress from individual practice to open design, often with an intermediate state of collaborative work with others. Teaching evolves from traditional transmissive practices towards more extensive use of open pedagogies, in which both students and teachers actively engage in public and non-curricular spaces. In terms of content and specifically the use of OER, the transition is from initial awareness through usage to a final stage in which both teachers’ and students’ content is shared interactively via networked identities. Finally, assessment shifts away from test-based and ‘disposable’ tasks to open and/or peer assessment, for example through the use of e-portfolios. All of these transitions present difficulties that are connected to ‘the need to empower teachers to embrace open approaches in their daily work’ (Nascimbeni and Burgos 2016) and which call for teachers’ attitudes and identities to transform as they embrace more open perspectives.

OEP as troublesome

So far, we have considered how OEP can be viewed as transformative, but it may be less obvious to define it as ‘troublesome’. Troublesome knowledge entails a more fundamental challenge than simply being complex. Its essence lies in the (often shared) experience of appearing counter-intuitive and difficult to assimilate into an existing world view (Perkins 2006, 2008). Rather than just adding further details or extending a person’s conceptual map, troublesome knowledge requires a redrawing of the map itself, and the rejection of some of a person’s pre-existing and deeply held beliefs (Kingsbury and Bowell 2016).

Embracing openness of practice implies that one works transparently or publicly, and/or freely gives away one’s resources as OER, which does indeed appear to be troublesome for many educators. The currently hegemonic view of higher education as ‘a business’ emphasises competition rather than collaboration, and has introduced widespread educator precarity into increasingly competitive and marketised higher education environments (Marginson 2011). This may partially explain why open approaches are not yet mainstream, or rather, why particular aspects of openness, such as the replacement of commercial textbooks with openly licensed ones, have gone mainstream more rapidly, while others are still often resisted. Viewed from the angle of troublesome knowledge/practice, taking a decision to select an open resource rather than a commercial alternative requires awareness and consideration, but entails relatively less apparent change in the educator’s role, and therefore could be much less troublesome, than (for example) opening up one’s own content for reuse and repurposing by others.

Although academics typically approach *research* from the perspective that ultimately supposes knowledge outputs are to be shared publicly for the public good in

forums such as journal articles or conference papers, and open access publication of research is increasingly understood as optimal (Veletsianos and Kimmons 2012), a contradictory approach seems to usually apply to teaching materials, which tend to only be made available to particular cohorts of enrolled students via enclosed learning management systems (Mott and Wiley 2009). Beyond the question of opening educator-produced content, conversations amongst staff and students again typically take place within enclosed spaces that are primarily understood as administrative sites (Burtis 2016). Additionally, the default form of assessment in higher education is the 'disposable' assignment, which once produced and submitted for marking, is unlikely to reach a wider audience or have any kind of afterlife beyond the summative transaction between the student and the assessor. The rationale for the closing of learning and teaching environments may be simply a matter of expediency; however, we suggest that it reflects a neo-liberal imaginary in which a resistance and reluctance to give up market share and competitive advantage is promoted which inhibits the sharing and exchange of OEP with professional colleagues and for the public good.

The possibility for learning and teaching to be repositioned as a social commons that facilitates the public good rather than as intellectual property in a competitive marketplace (Amiel and Soares 2016) has been enhanced by the widening availability of digital technologies that facilitate the exchange of ideas within and beyond the boundaries of formal educational spaces, although this represents a new iteration in the history of educational openness rather than a complete break from the past (Peter and Deimann 2015). However, the fact that this narrative is now frequently experienced as counter-traditional is perhaps why OE is frequently understood as a revolutionary social movement rather than simply a pedagogic or technical strategy. Going beyond opening content toward opening the underpinning pedagogical model (Smyth, Bossu, and Stagg 2016), whether by openly sharing teaching materials, opening discussions to wider audiences or publishing students assignments openly, represents a significant rupture with default, accepted norms of practice which is likely to, at least initially, be troublesome indeed.

OEP as liminal

One of the key insights that the TC theory provides is its acknowledgement of the role of liminality, which is understood as a state of being that is experienced when engaging with new ideas that are both transformative and troublesome in nature. Initially borrowing from anthropological literature on rites of passage into adulthood (Turner 1979, 2011; van Gennep 1960), the notion of liminality in TC theory is understood as a transitional space, from which the individual who emerges from the threshold-crossing experience is no longer the same person who entered into it (thereby implying, according to TC theory, that the change is also 'irreversible'). Cultural theory posits this liminal space as being related to a rite of passage in the sense that the discomfort the liminal experiences in the state of being 'betwixt and between' stable selves is manifest in a sense of being neither who one was, nor who one desires to be (Turner 1979). This holding-open of a time and space for transformation is thus seen to exist at the threshold between the worlds of previous knowledge and the new meaning-making that occurs when becoming established in a new identity and with a new status within a community of practice.

During threshold crossing, a prolonged experience of oscillation between old and new identities is very common, and the sense of being 'an imposter' or 'not a real

one yet' is ever present until a reconstitution of identity occurs. Successful transition through the liminal space is much more likely to happen when a supportive liminal environment is provided. In the education context, this involves strategies to effectively provoke and manage destabilising liminal experiences, creating opportunities for personal growth and professional development (Fortune, Ennals, and Kennedy-Jones 2014; Land *et al.* 2005; Marsh and De Luca 2016; Meyer 2012).

For an educator who is seeking to practice in the open, the transition to asserting oneself as an open educator may involve confronting and deconstructing how he or she was taught and learned how to educate, while facing new and challenging elements of the craft of teaching that are experienced as fundamentally unlike anything previously encountered. For an open educator, teaching comes to be recognised as a dynamic area of theory and practice that is expanded when the knowledge and pedagogical processes that enable it are shared and collaborative strategies are employed. The liminal period is a period when the world of possibilities begins to open, while the educator struggles with what may now be possible, both in theory and in new dimensions of practice, which are beyond their zone of comfort and familiarity.

While the TC theory indicates that the liminal phase is understood as leading to an irreversibly changed state and reconstitution of identity, we must caution against the assumption that the change is a straightforward move between binary positions, from closed to open. Findings from Cronin's (2017) research into open educators' practices suggest that educators consciously and selectively adopt open practices, not simply as liminal mimicry or 'trying out', but on an ongoing basis. She suggests educators' engagement with openness is 'continuously negotiated' across four levels: macro (global level), meso (network level), micro (individual level) and nano (interaction level), which suggests a protracted liminality rather than a rite of passage in which a threshold is irreversibly crossed.

Discussion and conclusions

In recent times, pedagogic innovation has generally addressed technical innovations and procedural perspectives about which teachers have been instructed (Area 2006), but until recently, values, beliefs and attitudes have received insufficient attention (Ertmer *et al.* 2012). The currently dominant neoliberal policy context casts teachers as technicians to be directed and controlled (Biesta, Priestley, and Robinson 2015; Larke 2019; Zeichner 2010); therefore, recentering the debate on teachers' identity is a relevant contribution to the development of open educators, which may answer Zeichner's (2010) call for an active stance against the neoliberal agenda. Korthagen (2004) has proposed a more holistic model of teacher education, described as the 'onion model' (p. 79), where the outermost layers are those of the environment, behaviour and competences, and the inner layers are composed of beliefs, identity and mission. All the layers are important, but research and training programmes have been more committed to the external ones whereas skills and behaviour are not sufficient if the inner layers corresponding to identity, sense of self and purpose do not equally evolve.

While OE is often characterised as a movement, faith in its innate capacity to deliver a transformative impact on education may be misplaced (Conole and Brown 2018); the history of 'innovative' technologies in education is one of cycles of hype and hope, in which in most cases, in the end, nothing drastically changes or is radically transformed (Cuban 1986). However, in contrast to the platforms and tools that

tend to be touted as the latest innovation agents, OE is not a technology, but rather a loosely-linked range of practices which, within today's highly digitalised society, has gained heightened awareness and widening potential. Drivers for engaging in OEP appear to be closely linked to the values, beliefs and attitudes that form part of an individual educator's identity, rather than simply reflecting the availability of relevant tools and technologies. Thus, while the possibilities made available by digital services and social media for content creation and sharing are fuelling a discussion about the importance of teachers as knowledge creators, and highlight their role as learning designers, the aspiration of the OE movement is to potentially transform education. This is made possible when openness is addressed as an element of educator identity, with corresponding philosophical and political commitments, rather than simply reflecting educators' decisions related to the use of particular resources and tools or even practices.

The analysis of the three characteristics of TC seems to show that this lens could be useful in order to contribute to the existing knowledge of the progressive development of teachers' professional identity towards the open educator. The lens of threshold practices that we have outlined is intended to provide a framework for examining the idea of the open educator as a result of a process of transformation that develops along a path that is, at times, troublesome. Of particular interest to us is how this implies liminality with respect to the identity of the educator who is 'becoming open', and yet, as Cronin (2017) has found, never becomes completely open. Noting that educator identity has elsewhere been theorised as 'sporadic' (Biesta 2013), 'under constant construction' (Trent 2010) and in permanent revision in the sense of 'protean elasticity' (Green and Gary 2016), we are therefore uncertain whether or not the protracted liminality associated with open practice can be completely escaped. However, while liminalities associated with TCs are sometimes said to be informative of mistakes or partial understanding (Land, Rattray, and Vivian 2014), it may be that the open educator comes to feel at home in a desired liminal space in which practices undergo constant adjustment. Such a reading is consistent with our view that the open educator is not one who uncritically valorises and embraces an open approach to all things at all times. Educators do not divide neatly into those who are open, and those who are closed, nor would we seek to argue that pedagogic choices should always default to open. Instead, our suggestion is that open educators have an understanding that pedagogies and practice options are available across a spectrum of openness, including an awareness of the benefits, but also the challenges and risks of open approaches. An open educator is one who, as well as developing relevant skillsets to implement such approaches, is further aware that such understanding is achieved only through a process of learning, unlearning and relearning.

Consequently, in our view, this 'open threshold framework' represents an intriguing lens through which to study the educator identity aspect of openness in education, which has so far not been widely investigated (see, e.g. the very recent thematic review of peer-reviewed articles on OEP by Bozkurt, Koseoglu, and Singh 2019). Further research is needed in order to explore the usefulness of this model in greater depth, in particular, to explore the insights and the self-perceptions that open educators have into their practices and identity development. For example, building on work by Cronin (2017) and Nascimbeni and Burgos (2016), empirical investigations could consider research questions such as: Do different levels of engagement with openness reflect 'stuckness'?; Can we understand time spent resolving uncertainties about open practices as progression through a liminal space, even if there is no

final emergence? and, Can we observe and understand differences in practices and identity across roles and levels, for example among professional teachers in schools, compared with researcher-educators in higher education, as well as among discipline specific or other types of group memberships? For example, we suggested above that the sharing of one's own teaching materials might be experienced as troublesome for academics, although they are already practiced at sharing the research aspects of their scholarly output, in contrast with primary and secondary school teachers. While difficulty resolving the rationale for this distinction and developing a culture of sharing teaching and learning resources might therefore be troublesome for academics, school teachers may find such practices even more troublesome without the 'scaffold' of scholarship.

The focus of the OE movement on open content and quality education is an important landmark in educational democratisation. While neoliberal education policies embed other notions of quality, such as improving results and rankings, it is paramount that teachers' identity be informed by critical perspectives, and here the open educator perspective may work as a catalyst. The open educator is, on the one hand, an open creator of knowledge who is committed to providing high-quality educational resources and opportunities for all. On the other hand, the open educator is committed to open practices from a critical perspective, enabling the opening up of the whole teaching and learning process from design, to implementation and assessment with all the implications and possibilities for educational transformation that may ensue. Therefore, we recommend that teacher education and professional development should be engaging with the nature of OE and fostering and scaffolding this as a liminal process. Although pre-service teachers or early-career academics might be introduced to the concept of OE, once they start their professional careers they might struggle to shift to greater openness. The promotion of self-reflection and reflection-on-action related to the nature and degree of openness embodied in one's practice would promote and encourage self-assessment of the troublesome 'stuckness' or limitations to achieving more open design, content, teaching and assessment practices.

We contend that the addition of the threshold lens to the OE conversation will add value because it provides a theoretical framework within which to assess the impact of engaging in OEP on the identity formation of the open educator, thereby creating a space within which to consider the 'material, relational and sociocultural context' (Ricaurte 2016) of OE. Considering open practices as threshold practices will be beneficial as we begin to consider the transformation, troublesomeness and liminality associated with the formation of an open educator identity in future open collaborations, allowing us to observe the phases of evolution from separation to aggregation (Kiley 2009; Turner 1979) and to elicit basic recommendations for both research and educational practice for the evolution towards becoming an open educator.

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