Exploring Open Educational Resources, Open Pedagogy and Teachers' Trust

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Introduction

Canada as a country has a strong economy and a well-developed educational system with provinces such as Alberta scoring within the top ten of 65 countries on the Math, Science and Reading standardized tests administered through the Programme for International Student Assessment (Alberta, 2017). The results from these 15-year olds clearly indicate that the Canadian K-12 system has many merits, including highly professional teachers and school authorities that support IT infrastructure and the integration of digital tools for teaching and learning. Yet, when one examines the World OER map, the visualization indicates that other areas of the world are more active than Canada in developing OER.

Current situation

Despite this OER trend, the research void of K-12 OER is also noticeable when a Google Scholar search ("K-12 +OER") is conducted - as in October 2017 it produced 29 results. On the same day, an Education Resources Information Center (ERIC) search with the same terms resulted in 10 hits. Both the w o r l d map and the digital search results reinforce the current lack of K-12 OER awareness and research within Canada and beyond.

Increased understanding through research is one reaction to this situation but other stakeholders such as educational publishers and those interested in this market place are also responding. Because of the nature of public education and the number of students involved, educational resources will remain a lucrative market and new business models will emerge, including, Amazon's *Inspire* (a K-12 OER platform), a commercial and American response to OER for K-12 teachers. Beginning with the public launch in 2016, *Inspire* has experienced initial enthusiasm followed by disrepute when teachers lodged complaints that other teachers had uploaded resources that they had not created nor gained permissions from the teacher-creators, a breach of both copyright and of collegial trust. Amazon responded by removing the contentious content, promising to implement a stringent review process, and restricting the service to beta testers (Young, 2018). Quietly reopened in July 2017 with a public beta version without a share feature, the ability to share was added by the end of summer (Young, 2018). Amazon's *Inspire* Frequently Asked Questions webpage attempts to answer questions related to copyright infringement and Creative Commons (Overview, 2018) and it reveals the complex responsibilities of OER teacher practices even for those eager to share. Tied to each uploaded resource is a "Report an Issue" link that enables a user to select the copyright violation that activates the company to address the infringement although Amazon's process is not public knowledge (Overview, 2018). Review functions are also tied to these shared resources and these

are not immediately posted, indicating that perhaps Amazon employees review the reviews. Being new to the K-12 OER landscape, only time will tell how and in what manner *Inspire* continues.

Undoubtedly, searching for content absorbs a great deal of teacher time as a recent American study found seven hours per week of non-instructional time was spent by teachers seeking free or subscription based resources (Gorman, 2017). Consequently to respond to organizing and assembling digital content, American curation companies for K-12 are emerging. Because teachers are willing to pay others to search and collate possible content, educational publishers such as McGraw-Hill have created commercial responses such as *Knovation* (Molnar, 2016).

Because of the nature of teaching children, OER resource development has been in smaller components such as lesson plans or supplemental resources for publisher's textbooks and materials as demonstrated by uploaded content on OER repositories. Unlike OER within higher education, where OER textbooks have received emphasis, for K-12 the resources are more granular and numerous. Sharing of resources has always been part of K-12 teaching (Blomgren, 2018) as this professional habit developed during the days of resource limitations that now starkly contrasts to the digital realm and its offering of resource abundance.

Since 2002 with the UNESCO definition of OER, there has been a slow saturation of K-12 using OER as a justified cost-savings in addition to its merit of higher quality curricular content (Wiley, Hilton, Ellington, Hall, 2012). In 2007, the two Californian initiatives *CK-12* (GoOpen, n.d.) and *OER Commons* (OER Commons, 2017) were both established to help support the development of K-12 OER. By 2014, the Horizon Report for K-12 identified OER as a 3-5 year American emerging trend (Johnson, Adams Becker, Cummins, Estrada, Freeman, Ludgate, 2013). This upward trend continues in the USA with federal government support through the fruits of the #GoOpen initiative with twenty states actively supporting K-12 OER (United States Department of Education, n.d.), with Washington and Utah leading the way.

With the onslaught of educational apps and the continual deluge of digital tools developed for this vast and steady market, K-12 teachers receive various pressures and influences to address the *daily divide* (Wiley & Hilton, 2009) that is - the non-school use of digital solutions in comparison to how schools are able to digitally respond. Additionally, with the shift in who participates in the creating, sharing and use of content through participatory technologies (Jenkins, Clinton, Purushatma, Robison, & Weigel, 2006) K-12 teachers feel the urgency of resource abundance and their professional responsibility to deliver curriculum with high levels of contextualization and relevancy. Developed in 2009, the TPACK model (Koehler & Mishra) with its 3 overlapping knowledge spheres (i.e. educator disciplinary/content, technology and pedagogy) parallels the rise and wide adoption of social media and participatory technologies. With the amplified ability for both teachers and students to participate and therefore engage in the 5Rs of OER, participatory technologies are embedded into open educational practices. K-12 teachers because of the very nature of their role and their interface with young learners are creating a digital pedagogy, both individually and collectively, a term that is still evolving in its awareness and full dynamic implications.

A digital pedagogy highlights substantial change among interconnected and therefore complex areas as Hegarty's (2015) eight attribute model of Open Pedagogy (OP) suggests. Beginning with Participatory Technologies within this model follow seven interrelated attributes: People, Openness, Trust; Innovation and Creativity; Sharing Ideas and Resources; Connected Community; Learner Generated; Reflective Practice; and Peer Review. As Hegarty

proposes a digital and open pedagogy is a complex rendering. Understanding the roles and connections among the eight attributes may be of use for practitioners who seek sense making as the waves of technology infuse the shaping of content – both in how it is taken up and the manner in which teachers actually teach the curriculum.

To examine each attribute in some depth allows for a greater understanding of its contribution to the overall model and how these eight attributes co-constitute and influence the vast weak and strong links among the interconnections of OP. Having provided the K-12 OER landscape and Hegarty's model, this paper will now examine the attribute of people, trust and openness.

People and trust

For all levels of educators involved with OER awareness, use and championing, an integral element is the role of trust. As a complex and dynamic characteristic, there is much that one could investigate regarding the role of trust but for this paper only three areas will be explicated: the role of trust with regards to school leaders; trust in the design and processes of an OER curricular repository; and the how trust relationships with colleagues are central to OER iterations.

Hierarchies and School leaders

The K-12 educational system has over the decades developed a bureaucratic organizational structure to support the enormous and constant task of public education. In effect, because of the scope and complexity of educating children, schools "face a perennial challenge of adopting the most productive levels of formalization, centralization, and standardization" (Tschannen-Moran, 2009, p. 219). This drive toward efficiency that originated during the pre-digital era has reinforced a hierarchy of educational authority that continues today. The hierarchical apex represents a few individuals with a great degree of power and authority that flows down and is dispersed. However, within some professional arenas such as that of doctors and lawyers, the pyramid is inverted with the most individuals at the top and "work is organized around the expertise of the professionals as they exercise discretion in responding to the needs of their clients" (p. 219). However, neither pyramid model reflects the changes wrought to the teaching profession more recently. Tschannen-Moran (2009) suggests that a hybrid of these two organizational models may be considered what she calls a *professional bureaucracy* whereby "the prime coordinating mechanism is the standardization of skills that the professionals have acquired in their training rather than the centralization and formalization inherent in a machine bureaucracy" (Hoy & Miskel, 2008 as cited by Tschannen-Moran, 2009). Additionally, Tschannen-Moran contrasts how the orientation of machine bureaucracy seeks greater control of teachers whereas when the two organizational pyramids overlap upon one another a higher sense of individual and collective teacher competency within a professional bureaucracy reflects a greater sense of trust.

School leaders include administrators and also those individuals with IT responsibilities related to the use of computers as part of instruction. Principals are imbued with a higher position within the educational hierarchy yet their success is tied to the success of the teachers within the school. Both principals and teachers influence and affect one another and the work environment involves a complicated trust relationship, perhaps like no other. As Tschannen-Moran (2014)

states: "Trust matters most in situations of interdependence, in which the interests of one party cannot be achieved without reliance on another. Interdependence brings with it vulnerability."(p. 20). An additional vulnerability for both principals and teachers is the reliance upon technology to deliver the promises of technology-enhanced learning. This reliance is in the hardware but also in the chain of IT hierarchical decision-makers, school-based and jurisdictional, who can weaken or strengthen the IT infrastructure within a school. Both teachers and administrators need to be able to trust the IT people and that the IT system within that school has been maximized to ensure the highest possible connectivity, security and ease of use possible within the given resources.

School leaders who reinforce a professional orientation convey a sense of trust in teachers' professionalism (Tschannen-Moran, 2009). As a dynamic quality, trust is earned and must be in constant play requiring communication and commitment. As Solomon and Flores (2003) identified:

> Trust and control are incompatible because the core of trust involves freedom. To trust people is to count on their sense of responsibility (or perhaps their sense of integrity), believing that they will choose to act in a trustworthy manner, while recognizing the possibility that they may choose to betray the trust. To trust someone is to expect that he or she will understand our expectations and figure out a way to overcome obstacles. But because of its essential link to freedom, trust always involves a risk. It is always fragile. (p.24)

Although conventional notions of bureaucracies appear to decrease perceptions of trust, within a school-based context it is possible that school leaders are able to exercise aspects of a professional bureaucracy that focuses upon and nourishes healthy trusting relationships among the people involved.

Curricular resources

In the legacy system that continues to influence Canadian K-12 education, curricular resources were not frequently an area where trust relationships at the school level were heavily involved. Instead, provincial ministries of education vetted textbooks that were published by national companies to complement the provincial curriculum (Blomgren, 2018). Once on the approved resource list, school-based decisions were primarily limited to this short list of textbook choices. However, with the advent of digital resources, and the concomitant changes to teaching and learning, curricular resource decisions within schools have now become more complicated and now includes both teachers and school leaders questioning the role of trust within the selection and use of digital educational resources.

Looking to OER as part of the landscape of resource abundance, educators through web searches may discover various locations that house OER ranging from textbooks and courses down to granular learning supports such as an animation. Although OER awareness and the understanding of copyright and licensing continues to grow, the means to share resources through repositories for K-12 have yet to be robustly established within Canadian provinces - as demonstrated by a recent Google search where the term *K-12 repositories* resulted in primarily American offerings. For Canadian teachers, a distancing away from OER may occur because of this American dominance because such resources may not reflect a Canadian or provincial context. A second distancing occurs if the repository design lacks intuitive aspects and obvious

ease of use for a classroom teacher. This double distancing has an individual teacher-user question the effectiveness of such a repository, thus stifling a curricular trust relationship unless the teacher is fully committed to the 5Rs of OER (Wiley, 2014) and pursues either revising or remixing of the resource.

Collegial practices

Resource sharing for K-12 teachers has long been established (Blomgren, 2018) and these practices were part of the local school-based community where collegial trust relationships existed. Demonstrating benevolence, honesty, openness, reliability and competence (Tschannen-Moran, 2014) these locally based, time and space constituted relationships may experience variations in the degree and complexity of the trust but are commonly experienced by teachers. However, within an online environment, collegial trust relationships experience variations due to the non-local, time and space independent interactions. Within the idealized conception of OER and 5R iterations, peer review, one of Hegarty's OP attributes ought to play an important role enabling a teacher to decide whether to invest more time with an OER resource based on the comments of another teacher-user. Trust in the reviewing process is integral, as well as trust in the professionalism of the OER creator and of any teacher-reviewers. As highlighted earlier in the Amazon *Inspire* example, OER involves various layers of interdependence and trust – and trust exposes vulnerability.

Openness

Familiar yet commonly used, the word *open* and its variations require a brief examination to deepen understanding of its connections to people and trust within the OP model. *Openness* as an adjective has ties to both noun and verb forms and their functions date to the ninth century Old English word *open.* With connections to similar words, in both spelling and meaning, from the Old Saxon, Old German, Old Norse and Dutch, the word *open* reveals a rich etymological heritage. As a noun, o*pen* is defined as an aperture, opening (early 13c); and, an adverbial as manifestly, publicly (*in open*, late 14c). As a verb it ties to the Old English *openian* with the definition of open up, disclose, reveal, and as an adjective, not closed down, raised up. In many Indo-European languages, the source of words for *open* appears to be the opposite of - that is, shut or closed (Harper, n.d., open, n.d.).

Related to openness, Peters and Roberts (as cited in O'Connor, 2013) have this contemporary offering towards understanding open knowledge production as a "decentralized and collaborative process managed through new modes of peer governance, exemplified in the traditions of open access, open source, open science and open education and… [Peter & Roberts] identify these trends as a political project situated within a broader philosophical, social and economic movement… [that indicate] we are in the midst of a new global era of open values, production and collaboration enabled by the open and participatory architecture of the internet" (p.1191). These two conceptions of openness, at the individual level and then more broadly as a societal movement, highlights how openness is both something both personally experienced and collectively witnessed, how educators are shaped and shape openness (Veletsianos & Kimmons, 2012).

Personality trait

Openness as an individual personality trait is included as a categorical dimension within psychology's Big-Five framework. The study of patterns of personality traits originates to the nineteenth century and has ebbed and peaked in its acceptance with psychologists now applying both a long and short form instrument to indicate personality tendencies (Gosling, Rentfrow & Swann, 2003). The traits are presented as co-related pairs thus indicating the numerous expressions and facets of that domain expression and include: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Gosling et al, 2003). In a recent Canadian study of OER awareness and use among higher education faculty those with a higher score on the personality trait of openness were more likely to have either created or revised OER (Jhangiani, Pitt, Hendricks, Key, Lalonde, 2016, p. 14). As noted in this study, examining personality traits and OER use has only been documented in this particular research and of the five domains possible only the trait of openness to experience was linked to OER use; as the report authors observed these faculty had an " openness to openness in education" (Jhangiani et al, 2016,p. 30).

Openness more broadly

For K-12 educators, openness relates to scholarship and theories studied as undergraduates with alignment to Dewey, Vygotsky, Freire, Paquette and Rogers (Roberts, Blomgren, Peters & Graham, 2018) as well as to contemporary applications of learning theories of social constructivism and connectivism (Siemens, 2005). The open movement in general supports the essence of public education for this young demographic and for both individual teachers and the system as a whole, the values of openness are embedded in daily practices of teaching and learning.

At an individual level, classroom teachers may participate in the awareness and use of OER through accessing semi-open digital offerings such as Khan Academy and YouTube videos. Sometimes, merely accessing and reusing an OER meets the needs of the teacher. However, whenever and each time educators move to sharing their own creations, there is a continuum of educational practices and individual questions (Cronin, 2017) educators use to determine their level of openness:

- Macro – *Will I share openly?*
- Meso – *Who will I share **with**?*
- Micro – *Who will I share **as**?*
- Nano – *Will I share **this**?* (p.26)

For K-12 teachers, these questions are also shaped by the digital locations available for sharing through repositories as CK-12, OER Commons and Curriki – all based in the United States and therefore reflective of an American orientation to curriculum and the country's inherent values and attitudes, including the use of the Imperial rather than the metric system. A Canadian teacher may be open to sharing through Creative Commons licensing but the policy and infrastructure to effectively support the ease and effectiveness of this sharing is not in place within a Canadian provincial or national level and nor are there current indications of such government supports being put in place. Such an undertaking would require thoughtful planning and robust financing

to fully reflect the complex ecologies involved with developing a repository to support a Canadian or provincial network of teachers engaged in open practices.

Openness and legacy systems

Teachers may have trust and an openness. They may purposefully search for CC licensed resources on the internet and curate such resources to directly reuse. They may locate a lesson or an activity and within the parameters of the CC license move to revise or take several openly licensed items and remix them. However, if they opt to share out, attributing and also ascribing an appropriate CC license, Canadian teachers may find that they are stalled when they go to redistribute the OER. Trust and openness are important qualities but so too is the ability to conveniently and effectively share. Wiley(2015) suggests that through practicing the 5Rs one develops an open pedagogy but if thwarted in their efforts because of the lack of larger institutional supports, teachers may feel disenchanted and critical of the open rhetoric. Conversely, Cronin (2017) believes that through experiences of networked digital participation and the embedded open educational practices that educators may move to understanding OER and purposefully engage in the creation, sharing and iterative actions that reflect a mature awareness and use of OER. Both Wiley and Cronin provide insight to the complex ecologies at work and how it is not an all or nothing endeavour.

The Canadian OER situation fosters the following question: How aware are Canadian provincial governments and other stakeholders such as teacher federations regarding the potentialities of OER for K-12? This is difficult to fully determine although search engine results do not indicate tightly aligned hits. In contrast, due to the #GoOpen initiative through the United States Department of Education, for fifteen months beginning from October 2015, 109 districts and 20 states committed to going open, to varying degrees (USDED, 2017). With the weight of the federal government encouraging awareness and use of OER for K-12, growth in the US has been remarkable and many states now have OER departments and personnel ascribed to furthering the gains of the #GoOpen initiative. At this level of support, these state governments for a variety of reasons including cost-savings, differentiating and individualizing learning, supporting teacher creativity and professionalism, contextualizing curriculum, and allowing for learner-generated content (Blomgren, 2018) have manifestly, publicly demonstrated that they are not closed, but open to educational systemic change.

People, trust and openness are just one part of the larger discussion of K-12 OER. Because of the possible disruption to educational publishers' previously staid and financially lucrative position, OER is a contested economic space (Bailey, Davis, Henry, Loureiro, 2014). Publishers have already begun to respond to this challenge and the opportunity for a wider variety of educational resources and the manner in which they are manipulated and shared influenced by subscriptions or proprietary limitations will likely continue to occur. The stakes are high and from this current Canadian landscape, the role of research findings may help inform the degree and type of transition made by educators and the various systems within which they work.

Phenomenology of Open Pedagogy

The OP attribute named as People, Openness, Trust (Hegarty, 2015) suggests a cluster of required elements – specifically teachers with an open personality trait (Jhangiani, Pitt, Hendricks, Key, Lalonde, 2016) engaging in a trust relational with both humans and phenomenological materiality. Such educators are able to enter into dynamic and contingent trust relationships – with others and with technologies that are artefactual that Ihde (1990) describes as a "set of human-technology relations" (p. 26). The phenomenon of trust, although an integral part of our lives, is complex and therefore no complete agreement stands regarding its definition, how to understand it or research its complexity (Schmidt as cited by Kutsyruba, Walker, & Noonan, 2016). Metaphorically trust has been compared to both glue and lubricant (Tschannen –Moran, 2014) and thus trust is able to bring disparate parts together or smooth out relations with others and technological materialities. By examining people, trust and openness and how they bifurcate and multiply as a part of OER and digital pedagogy, my research aims to describe in part the phenomenology of practicing an open pedagogy.

Phenomenological research supports "an ethical corrective of the technological and calculative modalities of contemporary life. It finds its source and impetus in practical phenomenologies of reading and writing that open up possibilities for creating formative relations between being and acting, self and other, interiorities and exteriorities, between who we are and how we act" (van Manen, 2007, p.11). van Manen later states that professional practitioners require pathic knowledge and that such knowledge is "prereflective, pretheoritic and prelingustic" requiring a language and research orientation that is sensitive to the *lifeworld* of the lived experiences of professional practitioners (2007, p.20). Teaching and learning is a very human endeavour and a phenomenological lens contributes in a practical manner differently from the more common efficiency or technical action orientation of educational research.

This research, still in its early stages, aims to contribute to the nascent status of OER and its substantial change to all levels of education. Although in Canada pockets of OER awareness and sophisticated use is still emerging, the integration of participatory technologies into daily teaching activities is gaining momentum which is integral to an open pedagogy. There is much to be gained by individual practitioners, librarians, administrators, policy makers, and educational leaders having a deeper awareness of the implications of the change that maturely developed OER practices will bring.

By understanding teacher lived experiences of trust, openness and OER processes, and how they articulate into an Open Pedagogy this knowledge may influence the OER shift with its inherent promises for K-12 education.

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