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Considering the Implications and Mechanisms of Scale within Open Education

Elias, Tanya

UNIVERSITY OF CALGARY

Considering the Implications and Mechanisms of Scale within Open Education

by

Tanya Elias

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Abstract

My dissertation is the culmination of a five-year critical investigation of the implications of scale within contemporary open education. My qualitative, critical, and tentative study is guided by the question: How do open educators perceive the mechanisms and implications of scale? It uses situational analysis theory-method package and a three-phase research process, including a qualitative online survey, collaborative map annotation, and focus groups. My study presents a multi-dimensional representation of open education's complicated relationship with scale, both big and small. At a massive scale, open online course providers are increasingly delivering standardized content on data-gathering platforms built to control the learning experience to generate profit that bear no resemblance to these connectivist-inspired MOOCs imagined by open educators just over a decade ago. At the same time, open educators working at a much smaller scale are increasingly turning their attention towards emerging areas, including open educational practices and open policy. Using situational analysis social worlds/arena, relational, and positional mapmaking techniques, this study exposes the silences surrounding these apparently contradictory approaches to open education and elucidates a different approach to scale adopted by many open educators. It further finds that because open educators are often motivated by an intention to improve education, due to co-option, the games of scientific language and overwork, they are at risk of falling into the prescriptive patterns that they seek to transform. My study concludes that mitigating that risk will require open educators to articulate their tacit awareness of the holistic growth and prescriptive production mechanisms of scale and to clearly articulate their scale-related intentions. Moreover, it suggests that open educators seeking to re-pattern prescriptive production within educational systems must learn to embrace unpredictability and uncertainty as a means of minimizing educational disasters.

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Glossary of Terms

cMOOC   Constructivist MOOC

MOOC   Massive Open Online Course

OER   Open Educational Resources

OEP   Open Educational Practices

xMOOC   Institutional MOOC

Chapter 1: Introduction

When it comes to scale, bigger is generally accepted as better. We are encouraged to "think big" and warned against being "small minded." In business, politics and online social networks, growth is typically treated as positive (Rosecrance, 1999; Tomasko, 2006). Likewise, within the field of open education, reaching wider audiences, increasing access to education and growing the profile of the field have often been treated as positive. Recently, however, risks associated with scaling up have begun to emerge in fields adjacent to open education. Describing scale-centric open business models of social media platforms, Donovan (2021) explained, "when a platform's growth depends on openness, it's more vulnerable to malicious use" (para. 6). In its most recent strategic plan, the open-access organization Creative Commons (2020) shifted its focus from *more* sharing to *better* sharing. What are the implications of these shifts? Can scale-centric approaches to open education make it vulnerable to malicious use? Should the focus of open education shift from "more" towards "better" sharing? Throughout my dissertation, I explore these types of questions.

Throughout my research I have consistently been reminded that open education has a complicated relationship with scale. At times, I have started to doubt the relevancy of my research. At the same time, that doubt has nudged me along. Even *if* we start from the assumption that big approaches to open education *will* play an important role in the future of education, how can we expect to determine what that role *should be* without first carefully considering the implications of scale? Within the broader context of openness, Edwards (2015) suggested that "the task for educational researchers becomes one of engaging in a struggle over the specific approaches to open-closed-ness rather than pursuing openness per se as a worthwhile educational goal" (p. 255). I suggest that a similar approach is required with respect to scale. As a result, I see my research task as one of engaging in a struggle over specific approaches to big-little-ness rather than pursuing bigness as a worthwhile goal per se. The purpose of my work is to carefully consider the implications,

mechanisms, and beneficiaries of scale, both big and small, within the field of open education.

Positioning My Research Within Open Education[1]

The meaning of "open education" has shifted over time and the term continues to lack a consistent definition (Stracke et al., 2019). Throughout history, the term was used to describe a variety of initiatives from the relaxation of entrance requirements to educational television (Baggaley, 2012; Edwards, 2015). Information sharing via the internet has more recently become central in defining contemporary open education (Macintosh et al., 2011).

Over the past 25 years, I have experienced this shifting meaning of "open education" first-hand. My early studies were supported by older technologies including telephone, mail, and print. These iterations of open education sought to transcend the limitations of distance, place, and time. It was an open education of flexible, self-paced learning; an open education that allowed the completion of courses outside of a program; and an open education that was interested in reducing the barriers to entry to public, post-secondary institutions. It was, in addition, an open education that enabled me to continue my undergraduate studies while living 3,000 km north of the closest university. As I began my graduate studies, I experienced a different open education, one that involved online learning in cohorts. During that time, I researched open education as a mechanism for increased accessibility (Elias, 2010, 2011). I later participated in a project that sought to use open educational resources (OER) to develop a university program in the West Indies (Richards et al., 2010), something I later came to consider a form of *open colonialism* that imposed OER from the Global North onto the Global South in a way that perpetuated historical power relationships in which small numbers of people from one place benefit from controlling the people, culture and resources of

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[1] An extended version of this section has been published in Elias, T. (2021). Embracing Entanglements: Exploring possibilities of non-traditional scholarship. In S. M. Morris, L. Rai and K. Littleton (Eds), *Voices in Practice: Narrative Scholarship in the Margins*

another place (Smith et al., 2018; Tuck et al., 2014).

My early doctoral work contrasted the process-based technologies of Skinner and Foucault within the context of modern-day *open philanthropy* (Elias, 2019) and explored ideas related to *open pedagogy* from a series of less cited educators from the 1960s and 1970s within the context of two alternative digital communities (Elias et al., 2020). More recently, my work has explored *open curation*, a process whereby openly published digital artifacts created by Indigenous elders, youth artists and scholars are combined to create productive sites of discomfort and disruption capable of advancing complicated conversations within digital spaces (Elias, 2021; L'Hirondelle Hill & McCall, 2015; Pinar, 2015). These different approaches to open education have defined my educational and career paths. They have given me ways to support my children and have often governed my sleep schedule. They have opened some doors and closed others. I first chose to study General Studies, then instructional design and lastly open education because these were the courses and programs that were available through a reputable, public institution in Canada. Fully online programs were then, and outside of pandemic-driven online pivots, remain largely the exception.

Despite their differences, approaches to open education typically share a desire to reduce barriers to education and have, therefore, traditionally had an interest in scaling up (Kanuka & Conrad, 2003). Kanuka (2008) further noted that the field has often been characterized by "incongruence and inconsistency in action between and among instructors, administrators and students, and the ensuing disagreements that revolve around the means rather than the ends of education" (p. 111). Lee (2015) suggested that the resulting theory-practice gap in open education has been leveraged by neoliberal forces to intensify disjunctions and "potentially oppressive power relationships" (p. iii) as for-profit corporations, foundations and venture capitalists have filled the void, often steering the open education agenda in troubling directions (Cottom, 2017; Elias, 2019).

These disjunctions, incongruencies and inconsistencies are the lived experience of my adult life and influence the work presented in my dissertation.

Additional Influences: Connecting Sewing Lessons and Different Approaches to Technology[2]

As I described in the previous section, my experiences with open education influence my work. In this section, I consider two additional experiences and their influences. The first was learning to sew with my Inuit mother-in-law twenty years ago. The second was an accidental encounter with Ursula Franklin's 1989 Massey Lecture entitled *The Real World of Technology* that re-aired on CBC radio in late 2020.

Learning to sew. Years ago, my mother-in-law taught me to sew *kamiik*, an Inuit form of winter footwear. These *kamiik* had several obvious benefits: they were hand-beaded or embroidered, hand-sewn and far prettier than nondescript, mass-produced, store-bought boots. Every pair was different. They also had other benefits. Where store-bought boots were heavy, *kamiik* were light. Store-bought boots fell off and could get lost in a snowbank; *kamiik* were tied on. Another advantage was that *kamiik* could be worn directly from inside to outside. When I walked my kids to school in the morning, they shook off the snow and walked straight inside the building without leaving ugly puddles behind. It was in their *kamiik*, perfectly adapted to Inuvik's cold, dry climate that my kids learned to run fast in the snow. *Kamiik* offered a very different approach to winter footwear than the mass-produced winter boots of my childhood. They were different, not only in terms of how they looked, but in terms of how they were made, handcrafted by relatives who gave us so much more than warm feet.

Kimmerer (2013) said, "This is our work, to discover what we can give. Isn't the purpose of

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[2] An extended version of this section has been published in Elias, T. (2022). Agency and Reciprocity in Digital Education: *Kamiks*, boots, and digital education. In G. Veletsianos & S. Koseoglu (Eds.), *Feminist Critical Digital Pedagogy*. EdTech Books. https://edtechbooks.org/feminist_digital_ped/HDSZvECK

education to learn the nature of your own gifts and to use them for good in the world?" (p. 239). Some of my mother-in-law's many gifts include her skilled use of technologies: needles, sinew, and strong hands. Using these gifts, she taught me many things. She taught me to question my white woman-ness; she taught me that there could be other ways, ways that challenged many of the things that I "knew" to be true. Although I could have not named it at the time, she was teaching me to think holistically and to value "small." She taught me the strength of small stitches, small stories, and small ways to withstand and restore. She taught me persistence and resistance. I am privileged to carry these lessons with me, lessons that challenge me to think differently about everything, including open education.

   Holistic and prescriptive technologies. Twenty years later, looking for a distraction from current events amidst a pandemic, I stumbled upon a re-airing of a lecture by Ursula Franklin, a distinguished scientist, educator, and humanitarian who considered the ways power is woven into technology. As I listened to Franklin's 1989 lecture in 2020, I was at once struck by the relevance of her words. She emphasized the need to perceive technology not as "a thing" but instead as the *ways of doing something*. These ways of doing include not only the technical means of production, but also the associated cultural practices (Foucault, 1988). Franklin (1999) further differentiated between what she called "holistic technologies" and "prescriptive technologies." Prescriptive technologies involve specialization by a process in which "something is broken down into clearly identifiable steps. Each step is carried out by a separate worker or group of workers who need to be familiar only with the skills of performing that one step" (Franklin, 1999, p. 11). They are defined by their focus on efficiency, control, standardization and maximizing gain. They usually favour machines over people and pay little attention to "externalities" that exist beyond the production process. In contrast, using holistic technologies artisans "control the process of their own work from beginning to finish… they draw on their own experience, each time applying it to a unique situation" (Franklin, 1999, p. 9). Holistic technologies are defined by reciprocity,

direct experience and minimizing disaster. They value people and long-term communal benefits. Franklin (1999) further explained how these different approaches impact the mechanisms and implications of scale:

> Scale was a term initially used solely to indicate differences in size… Only when the notion of scale was applied to production technologies was an increase in scale perceived as an increase in effectiveness, and therefore as inherently beneficial to the factory owner. From being a measure of comparison, the notion of scale moved to being a figure of merit. The value-laden phrase "bigger is better"–without ever stating for *whom* it is better— comes solely out of a production-centered context. (pp. 19-20)

Prescriptive technologies scale via a production model; holistic technologies scale using a growth model.

Prescriptive production model of scale. According to the production model, scale is a means of saving and/or generating money by maximizing efficiencies. Scale is achieved by increasing standardization in terms of both products and processes, which involves the division of labour and mechanisms through which to ensure compliance. These, in turn, result in an inverse relationship between size and the level of agency and customization enabled. When applying the production model, one seeks out easy-to-scale practices and focuses on replicating them at ever-increasing scales in predictable ways.

Holistic growth model of scale. The growth model of scale is more complex. As Franklin explained, "Growth itself cannot be commandeered…Growth occurs; it is not made" (Franklin, 1999, p. 20). When applying the growth model, one seeks out the best possible conditions and then tries to provide them. It is unpredictable and never guaranteed; growth is often perceived to be inefficient. As a result, according to the growth model, there is a non-linear relationship between size and the level of

agency and customization. As I worked through my dissertation, I began to make connections between learning to sew and the technologies described by Franklin.

      ***Kamiik* and holistic technologies.** As I continued to read Franklin's (1999) work, I remembered Simpson (2014), who said, "If you want to learn about something, you need to take your body onto the land and do it. Get a practice… It's not just pedagogy; it's how to live life" (pp. 17-18). I also remembered reading references to the *Inuit Qaujimajatuqangit*, directly translated as "that which has been long known by Inuit," a collection of Inuit traditional knowledge (WGTK, 1998). Arnakak (2001) described the *Inuit Qaujimajatuqangit* as "a living technology… a means of rationalizing thought and action, a means of organizing tasks and resources, a means of organizing family and society into coherent wholes… It is holistic, dynamic, and cumulative in its approach to knowledge, teaching, and learning — that one learns best by observing, doing and experience" (paras. 2-4). Connecting these Indigenous knowledges to Franklin's technologies, I began to see the practice of hand sewing *kamiik* as a living, holistic technology, one that stood in stark contrast to the prescriptive technologies associated with the manufacture of store-bought boots.

      When I read, "Let me emphasize again that technologies need not be used the way we use them today. It is not a question of either no technology or putting up with the current ones" (Franklin, 1999, p. 46), I thought about my mother-in-law who chose *not* to put down her sewing needles. I also thought about how open educators might choose *not* to quietly accept the prescriptive approaches to education. Describing the Covid-19 response among a group of teachers, Morris (2020) offered one example of this notion in practice:

> On the ground, in their living rooms and bedrooms and kitchens and cars, a bevy, a flock, *an urgency* of teachers realised there was another way. Or rather, they realised there *could* be another way. Not apparent. Not obvious. Not something anyone had prepared ahead of time.

But something not this or that, not rigour not rubric, but something *otherwise*. Something

the imagination could perceive (para. 13).

Our experiences shape us. Covid-19 changed the above teachers in profound ways. My experiences have also shaped me. My approaches to open education have become inseparable from a sewing practice that involved sitting on the ground with other women and kids, surrounded by scraps of materials and fur, needles and sinew, the strong smell of moosehide filling the room. An accidental encounter with the work of Ursula Franklin gave me the vocabulary of holistic and prescriptive technologies that has helped me to synthesize these experiences. Together, these two very different real-world experiences have become *my "*something otherwise." They have left me with ideas about the mechanisms of scale and their implications within education, ideas to which I will continue to return in the following chapters.

Description of My Study

With the above experiences in mind, the research question "How do open educators perceive the mechanisms and implications of scale?" guided my study. Using Clarke et al.'s (2018) situational analysis methodology and its post-structural underpinnings (Deleuze & Guattari, 1988; Foucault, 1982, 2012), I asked this question not to seek a "right" or "wrong" approach to scale but, instead, to invite a group of open educators to deconstruct the concept of scale within the field. My work, therefore, is focused on "elucidating differences, making silences speak and revealing contradictions within positions and within social groups" (Clarke et al., 2018, p. 116) through research designed to actively gather data about this theoretically and substantively underdeveloped topic. Situational analysis is interested not in the search for purity, a singular basic social process, or an oversimplified model. As a result, it foregrounds processes and emphasizes the fluidities of power relations using a series of mapping techniques (Clarke et al., 2018). My study is qualitative, critical, and tentative in its approach.

I sought out open educators interested in thinking more deeply about scale within a "situation of open education" across three distinct phases of research. In the first phase, I extended an open invitation to participate in an anonymous online qualitative survey and received 20 completed responses. Using these responses, I developed an initial messy map that specified "all the major elements in the situation under study, broadly conceived" (Clarke et al., 2018, p. 214). I then identified a group of six expert open educators to participate in the next phases. In the second phase, I invited this smaller group to asynchronously identify relationships and annotate an online map. Their annotations generated a "relational map" that I used to more clearly define "a situation of open education." In the third phase, the six annotators attended one of two 1-hour focus groups where they discussed the ideas generated in the mapping activity. The purpose of this process was not to seek "solutions" or "to achieve consensus," and my participants consistently complicated my research in ways that generated diverse ideas, questions, and new ways of thinking about the implications of scale within the field of open education.

Dissertation Structure

The remainder of this dissertation consists of seven chapters. In the next three chapters, I set the foundation for my study. In Chapter 2, I introduce the history of open education, its relationship to scale and early approaches to "big and little" within the field, culminating with the introduction of a conceptual framework of "big and little open education." Using this conceptual framework as a starting point, Chapter 3 more carefully considers the mechanisms of scale at work within open education as described within the scholarly literature. It focuses specifically on the ways that foundation funders, venture capitalists and corporations have benefitted from big approaches to open education and the consequences for instructors and students. It then offers a sampling of little open education initiatives that suggest new possibilities. Writing these chapters, I began to notice the silences surrounding the mechanisms of scale within contemporary, internet-enabled open education, silences that I sought to

better understand. In Chapter 4, I turn my attention to the application of situational analysis theory and methods and introduce my research study.

In the remaining four chapters, I present and analyze my research findings. Chapters 5, 6, and 7 each introduce one type of map created in alignment with situational analysis methods. Chapter 5 introduces a social worlds/arena map of open education that situates open education within broader socio-economic, political, and cultural contexts (Clarke et al., 2018). This chapter tells the story of the business of open education and explains how corporations, institutions, and governments shape what open education looks like, how it functions and whose needs it serves (Watters, 2021). Chapter 6 centers on the situational map and considers how open educators, many of whom see open education as a means of escaping the bureaucratic and prescriptive patterns of mainstream technological systems, approach their work. It considers the relationship between open educators' scale-related silences and their tacit awareness of different approaches to scale. In Chapter 7, I use two positional maps to further analyze the complicated scale-related positions taken within open education. Using a series of "positional pairs," I then explain how nuanced positional shifts at the small-to-medium scale can lead to dramatically different outcomes as initiatives scale up over time. Together, these chapters generate a multi-dimensional view of a "situation of open education" and its complicated relationships with scale. This view is not intended to be definitive, or even representational, but is instead a dynamic representation of a complex field as defined by a group of open educators. As suggested by one focus group member, it represents a form of crystallization (Ellingson, 2014), in that "every time you look at it from a different angle, you see something else that helps you complete the whole."

Chapter 8 includes my final analysis and conclusions. I first summarize my research study. I then discuss nine research findings associated with three topics: 1) Situational analysis theory and methods, 2) open education's big intentions and 3) the importance of scale-related intentionality among open

educators. I end the chapter by sharing my conclusions regarding the risks of prevailing prescriptive production patterns of scale and the alternate possibilities that might emerge if open educators intentionally and explicitly choose to repattern open education.

Space for the Unexpected

Completing this dissertation has not been easy. It has challenged me to carefully reflect on my own beliefs and assumptions about open education and scale, as well as the intersections of my personal, professional, and academic lives. In my original pre-Covid proposal I concluded with the hope that my research question and methodological approach would "create space for the unexpected." Undertaking my research as Covid-19 took hold globally brought much that was unexpected. As teachers around the world went online, the pandemic further complicated what it meant to be an "open educator" and intensified interest in the field, for both better and worse. The extreme pressures of the ensuing "online pivot" made it more difficult to recruit participants for my research. Moreover, many open educators who participated in my research were often reluctant to discuss the implications of scale directly and instead sought to redirect the dialog in other directions. As I had hoped, my methodological approach accommodated these challenges relatively well, and what has emerged is a view of open education as field deeply entangled with scale in complex and often invisible ways.

Chapter 2: Building a Conceptual Framework of Big and Little Open Education

As described in Chapter 1, the term "open education" has continued to change over time and lacks a consistent definition (Stracke et al., 2019). Despite the often-cited connection between the beginnings of open education and the advent of the internet, the meaning of open education has continued to evolve over time, reflecting changing times and technologies with roots dating back to the earliest forms of education (Baggaley, 2012). I begin this chapter with a brief look back at that history. I then follow the concept of "big and little" as it has been applied over time to related fields and draw on these concepts to develop a conceptual framework of "big and little open education." I have introduced this framework at this point for two reasons. First, the older works cited in this chapter simultaneously help to better understand the foundation of contemporary open education and inform the framework. Secondly, as I will discuss in more detail in the next chapter, the contemporary open education literature rarely addresses scale directly, so applying the conceptual framework of "big and little open education" to the literature was helpful in elucidating scale-related silences and exploring their implications within the field.

A History of Open Education

Throughout the 17th, 18th and 19th centuries, open educational efforts sought to advance adult and public education, often via coffee houses and institutes for workers without formal education. In 1858, for example, the University of London delinked its examinations from studying at the institution, thereby allowing students to earn a degree while working to earn a living (Daniel et al., 2009). Many of these efforts achieved positive results (Baggaley, 2012; Beard & Dale, 2010; Edwards, 2015; Peter & Deimann, 2013). At the same time, because they were generally geared towards white men, these initiatives widened "access to education by class and region, but not by gender or race" (Cronin, 2017, p. 17). As a result, they demonstrate the long history of unevenness within open education and highlight the ever-present connections between values, technologies,

power structures and education.

Open Pedagogy and Open Learning

In the 1960s and 1970s, open education became aligned with wider political movements advocating for human rights and social justice across two divergent strands of research (Schofer & Meyer, 2005; Siemens & Matheos, 2012). The first strand involved the poorly cited early study of "open pedagogy." Its advocates emphasized a "commitment to 'humanistic' values, including self-determination, freedom of choice and aesthetic appreciation" (Katz, 1978, p. 1). They highlighted the ongoing need to negotiate tensions between individual and community needs (Paquette 1979, 2005). The work of these early open pedagogues involved the implementation of small-scale, classroom-based interventions that sought to transform, rather than scale up, educational experiences (Rolfe, 2016). Around the same time, the term "open learning" began to be used to describe a variety of large-scale initiatives seeking to enable universal access to education. This strand of open education emphasized the scaling up of education through the application of increasingly industrialized approaches. It led to the formation of a series of well-known and well-researched *open universities* (Anderson & Dron, 2011; Cronin, 2017). Although my current work focuses on internet-enabled, contemporary open education, I suggest that there is much more to be learned by a critical return to these two strands of research that might serve as an early example of "big and little open education."

The first direct reference to the concept of "big and little" in an open education-adjacent field involved Schramm's (1977) categorization of "big media" and "little media" as a way of distinguishing high-cost, large-audience educational technologies from those that involved low costs and small audiences. Building on this concept, Garrison and Anderson (1999) differentiated between "big distance education" and "little distance education."

Big distance education. Garrison and Anderson (1999) described the mainstream distance

education approach of their time as big distance education and explained:

> Many educators, economists, and business leaders have argued that higher education institutions must transform themselves to be accessible and cost-efficient. This focus on access and cost has led to the development of an industrialized model of higher education … driven by technologies consistent with a model that maximizes access and minimizes cost through mass-produced, prescriptive, and largely self-instructional materials. The model that drives the mega-universities is made possible through mass communications technology and remains the dominant model in distance education. (p. 48)

Bates (1990) similarly noted that big open education institutions typically adopted an "industrialised approach to distance education" in which "their whole organisation, and especially their management and decision-making process is built around the requirements of the mass production of 'one-way' teaching materials" (p. 6). Taking a positive stance with respect to this model, he argued that "perhaps the most significant contribution that the industrial model of distance teaching has made to education is to develop a method that leads to coherent, comprehensive, accurate, integrated and highly effective learning materials specifically designed for independent study" (p. 10). Garrison (1997) described the processes of distance education using similar, though less positive, terms:

> The key features of an industrialised approach to distance education are rationalisation, division of labour, and mass production… Many specialised functions are defined, and the teacher is frequently "reduced to that of a consultant" in the preparation of the prepackaged teaching materials. Mass education results from mass production and makes education accessible to a large number of "consumers." … The industrial approach to education is prescriptive, objectified and depersonalised. (p. 7)

> For Daniel et al. (2009), this industrialized approach to distance education was a means of

escaping, what he called, an "iron triangle" whereby matters of quality, exclusivity and expense were inextricably linked to one another within traditional on campus teaching models. They explained that "packing more students into bigger lecture halls may increase access but will lower quality, defined as faculty-student interaction, unless the cost is increased by hiring more teachers. Similarly, attempts to improve quality usually restrict access and raise costs" (p. 33). He proposed a new division of labour separating teaching from knowledge assessment through examination, suggesting that such an approach could provide wide access to education of a consistent quality at a low cost using the internet and OER.

Kanuka and Brooks (2010), however, considered the problem of the iron triangle to be unsolvable arguing that "distance education can achieve any two of the following: flexible access, quality learning experience and cost-effectiveness—but not all three at once" (p. 69). Looking back on the successes and failures of distance education, Kanuka (2020) described how open "mega-universities" achieved accessibility and affordability using economies of both scale and scope.

> Economies of scale were required through large enrolment in targeted undergraduate programs. Economies of scope were accomplished by the division of labour for course production, based primarily on models of systematic instructional design and the division of labour (e.g., subject matter experts, instructional designers, production teams, and part-time tutors for instruction) ... Distance education providers offering large-scale enrolment with mass-produced course materials were able to restrain instructional costs (human labor) through the use of part-time tutors." (p. 52)

Kanuka (2020) further noted that open and distance education institutions were extraordinarily successful in their applications of industrialized and prescriptive technologies within education and that

"the key to their success was not in confronting massification; rather, it was in embracing massification" (p. 54). Peters (1989) explained that this "industrialisation of education represents a long-term process of historical and anthropological dimensions and not just the consequences of a decade of enthusiastic reform" (p. 4). As a result, there appears to be sufficient evidence that, historically, the use of the term "open learning" suggested the application of prescriptive and industrialized approaches to scale (Kanuka & Conrad, 2003).

Moreover, I located a series of specific references to Franklin's (1999) work within the big distance education literature. Pacey (1992) argued,

> In trying to deal with the complexity of the issues of technology in distance education and open learning we have adopted production model thinking. We have packaged, or fragmented, the issues into areas such as: the learner and appropriate use of technologies; the creation of telecommunications networks; the acquisition of hardware and the development of software… A growth model would have us view distance education as an organic whole that includes technology as an integral part of the open learning system. (pp. 9-10)

Also drawing directly from Franklin, Burge and O'Rourke (1998) suggested that within distance education, even staff development models reflected a production model of instruction "in which instructors new to distance teaching are imprinted once and for all like a bar of mint rock" (p. 193). They advocated instead for a more supportive and holistic, growth-based approach to faculty development.

Little distance education. Garrison and Anderson (1999) contrasted the dominant, prescriptive and industrialized model of big distance education described above with what they called "little distance education." They argued that little distance education, delivered using new videoconferencing tools,

would enable new forms of customization and flexibility for learners and educators. They further described the affordances of little distance education as follows:

> The function of materials, teacher guidance, and peer support of the course design serve to motivate, pace, inform, and challenge the student to dig deeply into the subject content and explore the implications of this knowledge with regard to personal and societal constructs. It challenges traditional knowledge as well as personal perspectives and meaning.
>
> (Garrison & Anderson, 1999, p. 53)

Bates (1990) agreed that these technologies could be "particularly valuable where relatively small numbers of students are concerned, since they avoid the high fixed production costs of the industrial model," but also warned that they could not be applied to achieve economies of scale within education "unless the opportunities for interaction for an individual student are dramatically curtailed" (p. 8). These comments demonstrate that prior to the widespread adoption of internet-enabled open education, there was a clear understanding that as open education initiatives grew bigger in size, the agency and customization enabled for learners and educators decreased.

O'Rourke (2004) further noted that within distance education, there was increasing movement towards the marketization of education, through which students were turned into specifiable products (Franklin, 1999; Tait, 2000). She went on to suggest that smaller-scale approaches offered alternatives, pointing to three examples of little distance education run by non-governmental organizations. Within these examples, high levels of learner support generated high levels of reciprocity among educators and students. She concluded,

> In marketized open learning, learner support has been sidelined by the tenet that technology is the most important instrument for achieving cost-effective mass education and profitable niche programmes. What may be lost, for market-oriented providers of

open and distance learning is the value of addressing social inequalities by providing

equitable access and appropriate learner support. What may have been found is a non-

competitive model of providing open and distance learning through organisations whose

social goals are more compatible with providing genuine learning experiences.

(O'Rourke, 2004, p. 153)

O'Rourke connected big distance education directly to Franklin's prescriptive technologies, and

highlighted the potential of non-competitive, non-marketized distance education alternatives. In fact,

throughout the 1990s and early 2000s researchers regularly highlighted the relationships between "big"

and prescriptive, industrialized production models of scale; they also connected "little" to holistic,

growth models of scale. Moreover, they often cited Franklin (Anderson, 2004; Cukier et al., 2003;

Hlynka & Chinlen, 1990; Lee, 1996; Mappin, 1992; Morrison, 1995; O'Rourke, 2004; Pacey, 1992;

Rowan & Bigum, 2003,2005; Rumble, 2001; Thompson, 2002; Zuga, 1995). These references suggest

that before the widespread adoption of internet-enabled contemporary open education, scholars often

considered the mechanisms and implications of scale within the field.

"Big and Little" Contemporary Open Education

As previously discussed, the internet is central to the development of contemporary open

education. Network theory[3] has heavily influenced by field, as has a desire to enable widespread

content sharing[4] (Macintosh et al., 2011; Marín & Villar-Onrubia, 2022). What tends to set these

contemporary approaches to open education apart from earlier efforts is their interest in the

abundance of content facilitated by the internet (Anderson & Dron, 2011).

For Weller (2011), this shift necessitated something he called a *pedagogy of abundance*. He

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[3] One of the principles of connectivism is that learning is a process of connecting specialized nodes or information sources. (Siemens, 2005).

[4] Open Educational Resources (OER) emerged from a desire to resolve the copyright issues associated with learning objects (Cronin, 2017; UNESCO, 2002).

explained that "while expertise is still rare… access to content associated with it is now on a different scale" (p. 226). Within this context, two high-profile open education initiatives emerged: open educational resources (OER) and massive open online courses (MOOCs) (Bayne et al., 2015). More recently, Open Educational Practices (OEP) have emerged as a practice-centered approach that enables students to shape public knowledge (Koseoglu & Bozkurt, 2018). At the same time, the term "open education" has increasingly been defined as a broad umbrella concept encompassing a variety of both existing and emerging initiatives (Weller, 2014). Throughout this section, I consider how the concepts of "big and little" might apply to these contemporary, internet-enabled approaches to open education.

Big and little open educational resources (OER). Open Educational Resources (OER) are teaching, learning and research materials released under an open license that permits access, use and distribution by others without (or with limited) restrictions (Atkins et al., 2007; Olcott, 2012). David Wiley introduced the first open content license in 1998 "on the premise that non-software content— specifically educational content—should be developed and shared in a spirit similar to that of free and open software" (Wiley, 2003, para. 5). Others quickly adopted notion of free and open content (Stallman, 2000). By 2002, MIT had launched its OpenCourseWare initiative funded by the Hewlett Foundation (MIT, 2002).

Weller (2010) later divided OER into two categories: big and little. Weller (2010) described "institutionally generated" big OER as well suited to achieve prescribed learning outcomes. Big OER were associated with high quality, explicit learning outcomes, content presented using a uniform style, delivery portal and data structure.

The biggest and most popular OER is Wikipedia. Consistently ranked among the most visited websites worldwide, it is also an example of a common-based peer-production model with strict

standards and processes (Benkler & Nissenbaum, 2006). Open textbooks might be considered another example of big OER. Open textbooks have become popular in Canada and the United States where the high price of textbooks has been defined as a barrier to access to education. Moreover, zero-textbook-cost degrees, also known as "zed-cred" are university degree programs in which all the required readings can be accessed via open textbooks or other OER (Marín & Villar-Onrubia, 2022).

In contrast, little OER might consist of a single image rather than an entire course and tended to be created and shared by individuals at low cost. Little OER were described as unpredictable and generative; they were easily adapted for use in different contexts. The "low production quality of little OERs has the effect of encouraging further participation… they are an invitation to participate precisely because of their low quality" (Weller, 2010, p. 5). He did not, however, connect big OER to prescriptive production models of scale. Instead, he described big OER as an opportunity to address quality-related concerns and to "raise the profile of open education" (p. 7).

Big and little(r) massive open online courses (MOOCs). Leveraging the OER movement, Siemens and Downes offered the first MOOC in 2008 (Losh, 2017). These early MOOCs were designed not as "a matter of transferring knowledge from a teacher to a learner, but as rather the product of the learner focusing and repeating creative acts, of practising something that is important and reflecting on this practice" (Downes, 2012, p. 11). Despite higher numbers of registrations in early constructivist MOOCs (cMOOCs), they averaged only 40-60 regular contributors (Kop et al., 2011). The principles underlying these little(r) MOOCs, therefore, align with those of little distance education and little OER.

These smaller cMOOCs fell into relative obscurity when "massiveness" captured the imagination of two Stanford professors who offered a massive open online course that attracted over 160,000 enrollees from 190 countries (Marques, 2013). Their course bore little resemblance to the earlier cMOOCs (Daniel, 2012; Moe, 2015; Rhoads et al., 2015). Sometimes referred to as xMOOCs, or

institutional MOOCs, these big MOOCs placed significant emphasis on growing overall enrolment numbers. Rodriguez (2013) found that scaling up enrolment in MOOCs involved compromising connectivist teaching and learning practices. As a result, these big MOOCs tended to rely on video lectures (Kolowich, 2013) and automated quizzes (Guzdial, 2013; Vaidhyanathan, 2017) in ways that privileged prescriptive, depersonalized and behaviorist pedagogy (Hickey & Uttamchandani, 2017; Morris & Stommel, 2013). Adam (2019) further argued "that intangible, unquantifiable parts of education, like developing social skills, friendships, empathy, compassion and collaboration are typically not valued in institutional MOOCs" (p. 376).

China is now investing in MOOCs on a scale never imagined. In less than eight years the country has developed over 34,000 MOOCs that have attracted around 540 million online learners. Moreover, since the pandemic, the more than 110 commercial and university MOOC platforms have been launched and at 36.56 million, 58.32 million and 60.74 million students attended classes on three consecutive Mondays. With China's new MOOCs has also come educational reform. A new platform and curriculum development committee is now responsible for the developmental and operational planning, organization of work, approval of standards, curriculum and education and the services of expert advisors (Xiong et al., 2021). This division of labour suggests a significant investment in prescriptive educational technologies likely to position China as a leader in the big open education sphere.

For many of their supporters in China and around the world, these big MOOCs are ever-increasingly seen as efficiency measures able to aggregate educational experiences and "standardize them for regularized future delivery" (Bogost, 2013, p. 13). In these ways, big xMOOCs align closely with big distance education's interest in mass production. As a result, I suggest that MOOCs can be loosely classified as big and little(r). Big MOOCs exhibit characteristics aligned with big distance

education and big OER, including an interest in efficiency and standardization, while little(r) MOOCs align more closely with the unpredictable, generative, and participatory characteristics of little OER and little distance education. Together, big, and little distance education, OER and MOOCs support a conceptual framework of "big and little open education."

Open educational practices (OEP) and open educators. The field of open education continues to shift and change. A growing area of interest in the field involves Open Education Practices (OEP) that "consist not only of creating and reusing OER, but also of other forms of transparency around academic practice, such as blogging, tweeting, presenting, and debating scholarly and pedagogic activities, in ways that promote reflection, reusability, revision, and collaboration" (Havemann, 2016, p. 7). Cronin (2017) described OEPs as "collaborative practices that include the creation, use, and reuse of OER, as well as pedagogical practices employing participatory technologies and social networks for interaction, peer-learning, knowledge creation, and empowerment of learners" (p. 18). These descriptions emphasize the importance of conscious and continuous negotiation among open education practitioners. OEP have tended to shift the emphasis within open education from the *product*, in the form of OER and MOOC content, to the *process* and *people* (Koseoglu & Bozkurt, 2018).

This increasing interest in OEP has coincided with an increased interest in the role of the "open educator." Nascimbeni and Burgos (2016) defined open educators as those who

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. (p. 10)

Tur et al. (2020) further suggested,

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. (p. 11)

Morgan (2019) further explored the adoption of OEP at several post-secondary institutions in British

Columbia. She found that the advocacy for OEP was "a choice, not a directive" (p. 376). Her research

participants highlighted the collaborative nature of these initiatives and the importance of involving both

faculty and librarians. As interpreted by open education scholars, OEP *processes* are directly connected

to open educators as *people*. Together, they support contextual, unpredictable learning opportunities that

seek to challenge prevailing educational power structures. As such, open-educator-enabled OEP

currently align with little distance education, little OER and little(r) MOOCs. At the same time, these

authors were all silent with respect to the mechanisms through which they intended to achieve

widespread transformation of education.

Big and Little Open Education as a Conceptual Framework

Throughout this chapter, I have introduced a simple conceptual framework of big and little open

education. Berman and Smyth (2015) explained that a conceptual framework is intended to move the

thought process of the researcher to a reflective level through which the different aspects of a study are

brought together. Farrow et al. (2021) explained that a conceptual framework "relates to how you

operationalise and metacognize your research project" (p. 10). A conceptual framework is intended to be

useful in generating ideas, identifying viable routes of data collection and analysis, communicating

results and visualising future research.

Throughout my research, I found that the conceptual framework of big and little open education

served as a helpful research tool, a simple structure for organizing scale-related ideas and for guiding me

in the development of my research methods. It further served as a helpful classification tool while

exploring scale-based assumptions within the open education literature. In the next chapter, I more

closely examine the academic literature on open education, paying attention to what has been gained (by

whom), and what has been paid (by whom) with respect to big open education and its little(r)

alternatives. The conceptual framework of big and little open education was also helpful in structuring

my research methods, as discussed in Chapter 4. Scale within contemporary open education is, however,

not a simple matter. Big tools can be used to support small numbers; big funding can have little results;

open education initiatives often start small but hope to have a big impact. I have, therefore, approached

big and little open education as a simple starting point, a binary to trouble and complicate throughout the

remainder of my research study.

Chapter 3: Big Promises, Big Gains, Big Costs, and Their Little Alternatives

As discussed in the previous two chapters, the dominant discourses of open education have often involved an interest in scaling up. Where this interest was implicit in earlier iterations of open education, it later became explicit with the inclusion of the word *massive* in the term MOOC. Some critics expressed concerns about this new focus on scaling up education (Liyanagunawardena et al., 2013; Yousef et al., 2014). Knox (2014) suggested "that 'massiveness' constituted not only something unprecedented in education" but also something whose impact should be carefully considered given the increasing global capacity and reach of open education (p. 165). Mackness and Bell (2015) argued that not enough attention has been paid to MOOC's ethical implications. Vaidhyanathan (2017) further noted that "when saying MOOC, the accent is on the 'Massive.' Everything exciting about MOOCs comes from their… massive enrollments. And everything troubling and challenging about MOOCs reflects their massiveness as well" (p. 297). These authors acknowledged the simultaneous risks and benefits associated with scaling up open education. However, such balanced commentary has been rare.

Using the conceptual framework of big and little open education introduced in Chapter 2, in this chapter I more carefully consider the implications and mechanisms of scale. Throughout this chapter I first explore why open education has garnered a high profile and how that profile has both benefitted and been shaped by big foundation funders, venture capitalists and corporations. I then consider the costs associated with these big approaches to open education, costs that have been incurred in the form of a social mortgage that has further normalized compliance among instructors and students. Finally, I introduce a sampling of little open education as evidence that different patterns of open education are, in fact, possible.

Big Promises

Extensive positive claims have been made regarding open education's ability to scale up (Edwards, 2015; Gourlay, 2015; Knox, 2013), with many initiatives positioned as a response to a crisis

(Almeida, 2017). Proponents of open education have regularly touted it as a mechanism to provide "access to learning opportunities to those who would not otherwise be able to obtain them" (Downes, 2010, para. 1) and as "a great step forward for humanity" (Koch, 2012, para. 10). Moreover, open education has been positioned as a response to a lack of access to educational content in the developing world, with OER and MOOCs heralded as innovations that would enhance quality of life, bring people out of poverty, and transform society (Caswell et al., 2008; D'antoni, 2008; Weissmann, 2012; Wiley, 2008). More recently, big open education solutions were positioned as a remedy for global school closures due to the COIVD-19 crisis when 1.21 billion learners, or 69 per cent of the world's student population, were affected (Bozkurt et al., 2020; Huang et al., 2020b). For example, Huang et al. (2020a) have reported innovative case studies of implementing OEP during the COVID-19 pandemic to enable innovative education from home.

Open education has also been framed as a response to a perceived urgent need for more efficient and modern teaching practices. Seely & Brown (2007) described open education as a "perfect storm of opportunity" capable of both addressing both a "growing global demand for education" and the inefficiency of "current methods of teaching and learning" by leveraging the internet's capacity to share information on an infinitely increasing scale. Open education has, therefore, often been presented as "the key, not only to solving the global education crisis, but to unlocking sustainable global growth in the 21st century" (Daniel & Killion, 2012, para. 2).

These framings of open education have not subsided over time. Recently, open education scholars have argued that OEP can improve access to education (Nascimbeni & Burgos, 2019) and actively engage learners in the creation and revision of OER and "help learners gain digital literacy skills (searching, assessing, and identifying online resources), which are fundamental for 21st-century literacy" (Huang et al., 2020b, p. 8). Moreover, during Covid teachers were encouraged to "overcome

the problem of limited time to prepare online learning content, teachers should make use of the

thousands of open educational resources (OER)… as well as public online tools, platforms and enabling

technologies" (Huang et al., 2020b, p. 5) and UNESCO argued that "the Covid-19 crisis has resulted in

a paradigm shift on how learners of all ages, worldwide, can access learning. It is therefore more than

ever essential that the global community comes together now to foster universal access to information

and knowledge through OER" (Chakchouk & Giannini, 2020, para 11).

Almeida (2017) noted that this type of "open rhetoric" has significantly increased the profile of

open education and has led to the creation of an "open brand" that simultaneously "replicates inequities

inherent in our current education system while using the language of emancipation" (p. 6). She further

noted that while promising new opportunities and freedoms, these large-scale open education initiatives

have often sought out tools and practices to increase effectiveness. In the process, they have, perhaps

inadvertently, accelerated the adoption of a toolkit centered around prescriptive technologies in ways

that have led to significant gains for some and costs for others. These gains and costs are described in

the next sections.

Big Gains for Some

The emergence of open and networked learning coincided with the advancement of neoliberal

politics in many industrialized countries, where many of the technologies that support these approaches

to learning are designed by large, US-based corporations who have seen open education, and

particularly MOOCs, as a "way to enable cheaper and wider access to higher education" (Jones, 2014, p.

170). Focused on product commercialization, these companies tend to fund research that supports their

application development both directly and by way of research foundations (Lyotard, 1984). These

funding approaches have had a significant impact on the trajectory of open education research and

practice.

Foundation funding. The history of large-scale funding within open education began with the

Hewlett Foundation's investment of 170 million dollars in OER over a 15+ year period. Between 2004 and 2010, their agenda focused on global adoption of OER by traditionally underserved populations in both the developed and developing worlds (Bliss & Smith, 2017; Caswell et al., 2008). Correspondingly, open education research centered on topics like "giving knowledge for free" (Hylén, 2006) and "addressing the digital divide" (Haßler & Jackson, 2010; Kanwar et al., 2010; Lane, 2009; Smith & Casserly, 2006). By 2011, Hewlett had shifted its focus. As "they provided grants for creating more polished, market-ready primary resource products, such as full end-to-end K–12 curricula and complete textbooks aligned to higher education courses" (Bliss & Smith, 2017, p. 17), academic research also shifted its focus. A significant body of research related to the use of OER as a solution for high textbook costs emerged (see Bliss et al., 2013; Raneri & Young, 2016; Silver et al., 2012; Weller, et al., 2017; Wiley et al., 2012). However, while the research connecting open textbook adoption and cost savings grew, the critical open education research into the potential consequences for faculty and students remained scarce (Almeida, 2017; Knox, 2013). Philanthropic foundations have, therefore, successfully set and re-set the agendas of large-scale research in open education and related fields over the last 15+ years.

What does the shifting attention of powerful funders mean for researchers who are unable or unwilling to pivot? Reviewing the limited literature associated with big open education funding models, concerns regarding sustainability and increased demands on faculty arise. Sclater (2010) noted an overreliance on impermanent sources of revenue. Several other scholars have acknowledged that sustainability of open education initiatives remains a challenge (Marín & Villar-Onrubia, 2022; Orr et al., 2015; Risquez et al., 2020). Tellingly, most big open education initiatives, including Utah State's high-profile Open Courseware Movement, have failed to survive beyond the usual span of start-up funding (Friesen, 2009; Kanwar et al., 2010).

Where open education initiatives do continue post-funding, there is growing evidence that they are typically maintained by educators who receive no monetary benefits, a situation that could lead to this form of work becoming both expected and devalued (Almeida, 2017; Crissinger, 2015). Morgan (2019) further noted that in many institutions, those seeking to advance the adoption of open educational practices were often not well supported, something that she noted was "surprising given the well-publicized success of the BC open textbook initiative that has seen open textbooks adopted in all 25 institutions" (p. 374). Big open education has become a source of marketing for universities and revenue for governments (Bogost, 2017; Huijser et al., 2008; Watters, 2014). At the same time, the attention paid to big open education initiatives often obfuscates excellent work being done by professors within their own face-to-face classrooms and the reality that large-scale open education initiatives cost rather than save professors and institutions money (Vaidhyanathan, 2017).

Venture capital. While the research agenda for OER began to shift to the pragmatic, MOOCs quickly captured the imagination of private foundations and venture capitalists. The Gates Foundation allocated millions of dollars to support the edX platform (Rhoads, 2015) and the popularity of MOOCs exploded soon after (Losh, 2017; Meyer, 2012; Solomon, 2012). More money followed as MOOC platform and application developers found themselves "at the intersection of Wall Street and Silicon Valley" (Caulfield, 2012, para. 10). Udacity, for example, received $15 million from a single venture capitalist and Coursera raised $43 million from investors that included the World Bank. Quickly, these start-ups with close ties to Ivy League schools racked up millions of course registrations (DeSantis, 2012; Lewin, 2012). These investors have, however, become increasingly interested in seeing a return on their investment, and there has been a shift among the big MOOC platforms towards placing both legal and *defacto* restrictions on the use of content within these proprietary tools.

Corporations. Where foundation funding and venture capitalists have re-set the open education

research agenda and invested heavily in their own in-house research and promotion, big corporations are simultaneously resetting the trajectory of open education practice. In the early days of contemporary open education, little, often open-source tools were developed to support learning. Computer Supported Intentional Learning Environments (Scardamalia et al., 1989) and Open-Ended Learning Environments (Hannafin et al., 1999) offered early examples of learning environments where learners constructed meaning in situated and contextual ways. Downes (2010) described how he adapted the open-source software tool gRSShopper to serve as a personal learning environment capable of empowering learners.

Over the past decade, however, there has been a significant shift towards the adoption of mainstream corporate tools to support open education. In a case study investigating the usage of tools developed by the "Big Five" technology corporations (Amazon, Microsoft, Apple, Google, and Facebook) within open education, Joseph et al. (2019) concluded that the reliance on these tools was so high that moving away from their use was not a viable option. As a result, most open educators have become entangled with big technology whose purpose is to maximize corporate profits through increasing efficiency on increasingly massive scales.

The Covid-19 pandemic has further intensified these entanglements and fundamentally changed the delivery of education across the globe. In response to school closures students, educators and institutions have accelerated their adoption of online learning and educational technology (Turnbull et al., 2021). Some students and educators turned to social media, using tools including WhatsApp, Telegram and Google Hangouts as a means of communication when in-person classes were suddenly cancelled (Prinsloo et al., 2021). In many parts of the world, educators and students relied heavily on Facebook to support learning (Al-Balas et al., 2020; Kara et al., 2020; Lassoued et al., 2020; Rizun & Strzelecki, 2020; Uzzaman et al., 2020). In fact, UNESCO encouraged educators to adopt commercial tools that they and their students were already familiar with (Huang et al., 2020b). Perhaps the most

popular pandemic teaching tools, however, were Zoom as educators sought to recreate physical learning

places in cyberspace (Turnbull et al., 2021) and Learning management Systems (LMSs) that not only

taken on a dominant infrastructural role but also "built interoperable integrations with third-party

platform plug-ins to enable data mining at scale from the increasing participation of students in

digitally-mediated education" (Williamson & Hogan, 2021, p. 28). At the same time, scholars reported

increased educational adoption of Intelligent Personal Assistants (IPAs) (Sáiz-Manzanares et al., 2020);

Artificial Intelligence (AI) and machine learning components (Bañeres et al, 2020; Choi & McClenen,

2020).

In the process, open education has ceded ground to techno-libertarians (Bogost, 2017; Kember,

2014; Williamson & Hogan, 2021). In the face of these realities, Almeida (2017) asked, "Why has a

movement that at its core questions who has the right to access and contribute to scholarship not

prompted a sufficient critical confrontation of these relationships already?" (p. 6). Several scholars have

suggested links between funding sources and the directions of the funded initiatives. Nascimbeni et al.

(2021), however, noted that "since most OER projects receive funding from private or governmental

sources, donors can drive their projects towards collaboration… as one of the conditions for funding."

Marín and Villar-Onrubia, (2022) further noted that the Hewlett Foundation also funds the Global OER

Graduate network, a network of PhD candidates around the world whose research projects involve open

education and is administered by the Open Education Research Hub at the UK Open University. At the

same time, in a bibliometric mapping analysis Tlili et al. (2021) found that the UK Open University "is

one of the leaders in the field of both OER and OEP" (p. 12). Might these same organizations, either

directly or indirectly, drive open educational researchers away from critical scholarly research? It is

difficult to link this scarcity of critical research within open education scholarship to the power of

funding organizations and open education's dependence on commercialized tools discussed throughout

this section, but it is also difficult to believe that there is no connection, because as explained by Lyotard (1984) "whoever is wealthiest has the best chance of being right. An equation between wealth, efficiency, and trust is thus established" (p. 45).

Big Costs for Others

Corporations, venture capitalists and some research groups have realized significant financial gain from open education. Some might further argue that open educators and learners have also benefited from access to highly effective "free" tools and educational opportunities. Franklin (1999), however, warned, "although prescriptive technologies are often exceedingly effective and efficient, they come with an enormous social mortgage. The mortgage means that we live in a culture of compliance, that we are ever more conditioned to accept" (p. 17).

In this section, I consider the consequences of the social mortgage associated with big technologies when applied to open education. Truscello (2003) described a secretive discourse taking place within a computer that hides meaning within its source code in ways that reinforce the status of the ruling class without its subjects understanding the terms of their subjection. Similarly, Gajjala (2011) compared computer software to railway tracks and roads that enable access along only some routes and only for some populations. Gajjala (2013) further explained within technical platforms bodies and cultural objects and other signifiers of difference are standardized in ways that renders code invisible. Cottom (2016) reiterated that "digitization is not a neutral process in social relations" (p. 12). She argued that new digital technologies and processes cannot be expected to be democratizing, but instead will reproduce the unequal social relationships of the society that produces them.

Although in the above quotes Truscello, Gajjala, and Cottom spoke of technological platforms in general, Gajjala et al. (2017) explained that the tools used within the field of open education are not immune to these realities:

The contradiction of individual control over learning counters online surveillance and

digital platform design. Algorithm and community bylaws together produce opaque

hierarchies and invisible control over the process where the rules of so-called

participation and the level playing field have the potential to exploit and oppress.

Centralization of power still exists as MOOCs render very little opportunity for

knowledge production beyond the limits of the MOOC's objective. Furthermore, [they]

promote education through the guise of neutrality. The MOOC professor assumes the

position of the omnipotent gatekeeper of knowledge who draws from fact. (p. 146)

Funes and Mackness (2018) further pointed out the exclusionary implications of using social media

platforms like Twitter, Google, and Facebook, whose design issues include algorithms that "demote

posts that lack engagement ensuring only the loudest voices are heard" (p. 122). As a result, within open

education, learners and educators often fall under invisible forms of control, many of which are not

aligned with their values and interests.

In the process of leveraging big, prescriptive tools, open education often normalizes the use of

features like personalization, automation, gamification, and data tracking. Algorithms built into digital

tools and platforms now regularly select what we see and in what order; they moderate who and what is

allowed via their terms of service. This "web of platforms, personalization, clickbait and filter bubbles is

the only web most students know" (Gilliard, 2017, para. 2). At the same time, both students and teachers

are frequently exposed to the largest-ever surveillance network without their knowledge or informed

consent (Gilliard, 2018). In the process, these technological tools enact a form of "digital feudalism"

(Schneier, 2013) or "digital imperialism" (Watters, 2014) in which the privacy and security of users is

decided by others, with neither their input nor consent. Simpson (2014) eloquently explained the risks of

such an approach. She warned that if we "learn to normalize dominance and non-consent within the

context of education, then non-consent becomes a normalized part of the 'tool kit' of those who have and wield power" (p. 15). More recently, scholars have identified the surveillance-related risks associated with online educational tools (Gray, 2022), risks further accelerated by the pandemic (Duball, 2020). Increased use of third-party technologies enables additional data collection, much of which corporations will seek to monetize. Security risks associated with internet personal assistants, video conferencing software as well as concerns over data ownership, data sharing and consent have all been reported (Lassoued et al., 2020; Romero-Ivanova et al., 2020; Turnbull et al., 2021; Xiong et al., 2021). As a result, rather than opening new ways of interacting with and learning from one another, the use of mainstream large-scale tools to support open education initiatives have tended to further regulate educators and learners, standardizing their actions via code that decide *for* them what is and is not possible both within and beyond the context of open education.

Calls for Alternate Approaches

In recent years, open education has benefitted from a growing body of critical research (Crissinger, 2015). Knox expressed concerns with respect to scale within the context of several big open education projects (2014, 2017). Christen (2012) connected mainstream open access projects to the longer "collecting history of Western nations [that] is comfortably forgotten in the celebration of freedom and openness" (p. 2876) and Crissinger (2015) argued that assuming access to more information can, in and of itself, alter "exploitative colonialist histories and deeply rooted structural oppression… is [often] blind to an understanding of structural issues" (para. 18). Joseph et al. (2019) argued that open educators "should be concerned about the potential exploitation of free labour and the role such resources play in furthering academic neocolonialism" (p. 363). Similarly, Adam (2019) described MOOC platforms as "promoting a form of 'digital neocolonialism' through the unidirectional transfer of standardised Western education to a diverse international pool of participants," reiterating that when "scalability is the goal, economic efficiency is promoted at the expense of quality learning

experiences" (p. 377). Among these critical conversations, there have also been calls to seek out alternative approaches. In her criticism of mainstream open access, Christen (2012) asked,

> Can the imagination and technological prowess that promoted open access publishing, open-source software, and Creative Commons licenses exist side-by-side with those alternative systems of knowledge production that rely instead on social relations maintained and forged through negotiated interdependencies, which have as their goal the mutual gain between stakeholders in social, economic, and cultural terms? Can we imagine a digital landscape of social media that provides access controls but does not simultaneously invoke individualistic notions of privacy or abusive systems of censorship? (p. 2880)

Within the context of open education, Adam (2019) called for a response in the form of "decolonising technology [that] aims to destabilise hegemonic, capitalistic, and neoliberal practices embedded in technology through subversively turning it into tools for resistance and liberation" (p. 371). Joseph et al. (2019) further argued that open education "must explicate the social relations and power imbalances embedded in OER design, development, dissemination, and engagement and not only make content available but do so in a manner that is easily adaptable by a variety of users" (p. 363). In the next section, I explore a series of examples of little alternative approaches to open education that offer responses to these calls for action.

Little Alternate Approaches

In this section, I introduce a sampling of little(r) approaches drawn from the open education literature. They are not offered as "perfect" examples of little open education. In many cases, the authors have remained silent with respect to their intentions in terms of scale and the tools used, but such silences are the realities of working in a field that has become entangled with "big" in complicated ways. What this sampling does offer is tangible examples of how we might begin to pay more attention

to, and place more value on, smaller forms of open education.

Rejecting the argument that "information wants to be free," Christen (2012) suggested that information wants to be contextualized in ways that give power back to local communities. She went on to highlight open education projects in which

Indigenous peoples, historically shut out of national public spaces and civic life, are

collaborating on a variety of projects that highlight alternative ways of imagining

information creation, circulation, and the practices of access. Off the grid, Latin American

and Australian Indigenous peoples have used pirate satellites and radio programming to

connect politically, socially, and culturally between dispersed communities. (p. 2881)

In another interesting example, the African Storybook project promotes the development and translation of stories in local African languages in ways that promote multilingualism and context-specific content (Welch & Glennie, 2016). In these examples, local communities themselves created, generated, and shared knowledge in meaningful ways to them. Moreover, they suggest powerful possibilities for little, low-tech open education.

Within more mainstream, contemporary open education, many open educators have had first-hand experiences with small-scale approaches to open education that tended to downplay the need to scale up enrollment, funding, and technologies (Mackness & Bell, 2015). Levine et al. (2012) used a technologically dispersed approach for students to create a digital identity and their own personal infrastructure that they could then use to exert agency over how and where they chose to share. They described it as "a (fortunately-not-so-massive) open online course on digital storytelling… for both regular students and anybody with an internet connection" (p. 1).

In another example, Honeychurch et al. (2016) highlighted the positive outcomes for a group of about 50 participants in the Rhizo MOOCs that came in the form of "sustained channels for meta-

discussions—and heated debate—about community, learning, and dissemination in an era of knowledge abundance" (p. 28). Within the context of the same course, Bali et al. (2015) described an "opportunity to not only connect with others but to take learning a step further and actively collaborate at one's own pace, in one's own place" (p. 113). These benefits did not, however, scale evenly across all course participants (Mackness & Bell, 2015). These contradictory findings suggest that within this MOOC connections grew in unpredictable and inefficient ways that align with both little open education and holistic technologies.

In another example, drawing on Suiter (2013)'s definition of hacking as the practice of innovative customization and exploring weaknesses, Zamora (2017) "asked the community to consider hacking as playful exploration" (p. 115). Gajjala et al. (2017) advocated for a similar "rehacking" of the traditional education system in their online course, suggesting "that the researcher/teacher and researcher/student must engage in the production of culture and subjectivity in the specific context while interacting with others who are doing the same. This enables them to really talk about the meaning making" (p. 150). Many contemporary open pedagogues are increasingly emphasizing similar collective approaches to open educational practices (Hegarty, 2015). DeRosa and Robison (2015) defined open pedagogy as using "OER as a jumping-off point for remaking our courses so that they become not just repositories for content, but platforms for learning, collaboration, and engagement with the world outside the classroom" (p. 118). These little approaches to open education emphasize the importance of reciprocity as a means through which to grow both relationships and community in holistic ways.

In one final example, Worth (2017) described an open course called Phonar, an example of what he called "holistic open pedagogy." Throughout the course, he made it clear that the teachers did not have definitive answers to the questions being asked, but instead acted as curators and contextualizers. He further highlighted the importance of reflecting on the following powerful questions:

Have I enabled my class to give their informed consent to learn with the digital? Is there

an equitable share of the power within and without the class, and if not, is that dynamic

transparent? Do any of my teaching decisions constitute barriers to entry/engagement,

such as geographical, cultural, technological, linguistic or academic? Who owns our

data? (p. 101)

Consent, power, transparency and ownership, these important ideas could offer more insight into the

potential benefits of little approaches to open education more aligned with holistic technologies.

Returning to Franklin (1999), she suggested that

Any tasks that require caring, whether for people or nature, any tasks that require

immediate feedback and adjustment, are best done holistically. Such tasks cannot be

planned, coordinated, and controlled the way prescriptive tasks must be. (p. 17)

The above examples of little open education illustrate a wide variety of ways in which open

educators are engaging imperfect holistic technologies within open education. These approaches

are unpredictable and yet generative; they center around immediate feedback and adjustment and

care.

Everything Starts Small

Every new open education initiative has started small. The idea of little distance education was

tied to the possibilities introduced by the invention of videoconferencing (Garrison & Anderson, 1999).

Twenty years later, after a pandemic-driven pivot to videoconference-based online learning at scale,

many educators are more likely to associate videoconferencing with "Zoom fatigue" or "Zoom gaze"

than something new and exciting (Canes, 2020). Like little distance education, little OER and little(r)

cMOOCs emerged out of excitement related to the emergence of a new Web 2.0 technology. Many early

open educators were excited by Web 2.0's ability to enable "networked learning" that was "defined by

attributes of autonomy, reduced resistance to information flow, ease of connectivity, organic growth,

rapid iteration and improvement of ideas and concepts, as well as ease of scalability" (Siemens & Weller, 2011, p. 166). The references to *both "organic growth"* and "ease of scalability" in the above definition suggest that, in the age of internet-enabled open and free movement of information, many open educators believed that the rules of prescriptive production no longer applied (Lamb, personal communication).

Gur and Wiley (2008) warned instructional technologists to avoid objectification within the context of an earlier initiative related to learning objects. Citing Franklin, they noted that an "implication of a production model for education is that choosing a particular educational institution will turn the student into a specifiable and identifiable product" (p. 114). Drawing from Lyotard (1984), they further highlighted the risk of reducing education to a commodity, "something produced, packaged, sold, traded, outsourced, franchised and consumed" (p. 116). They did not, however, associate these same risks with OER. Instead, they appear to have perceived OER as an educational approach that was removed from arguments of efficiency and economies of scale (Moe, 2015). Stewart (2013) further argued that the internet be treated not as a technology but instead as a medium for human engagement through which "the intersection of massiveness and openness in MOOCs – no matter their structural model – may be taken up as having sociocultural scale effects on learning and literacies" (p. 232). As a result, they concluded "that networked learning opportunities at the scale MOOCs are beginning to reach have the potential to expose large numbers of people to participatory literacies and learning perspectives, even if and where facilitation and testing are highly instrumental in approach" (p. 229). Moe (2015) further argued that the inclusion of "commercial OER or branded content" within the field of open education was beneficial because "this array of producers at various experience levels is an opportunity for the positive growth of OER" (p. 357).

Internet-driven excitement made the field of open education seem new. It "brought many new

people, ideas and institutions to the field with different backgrounds" (Lambert, 2018, p. 225) and many scholars of contemporary open education worked with few references to earlier works (Weller et al., 2018). Put together, the excitement regarding the internet, the belief that it could disrupt prescriptive production models of scale and the influx of new people into the field who were missing information on the context of earlier open educational research appear to have created an environment where scale was treated as either inherently positive or innocuous. As a result, little consideration was given to the mechanisms of scale or its implications for the practices and learning conditions within contemporary open education.

OEP and new possibilities. As OEP gather more attention, it remains to be seen whether OEP will maintain their present course or follow the trajectory of other open education initiatives, diverging into "little OEP" aligned with current approaches, and "big OEP" focused on efficiency and standardization. It is difficult today to imagine OEP aligning with values of control, standardization and maximizing financial gains for institutions and corporations, but the same was true for earlier little open educations at specific moments in history. Like with earlier open education initiatives, early adopters of OEP appear to share a consistent desire to re-pattern education in ways that are more open and equitable. Alongside references to their contextual, generative, and reciprocal people-based processes, definitions of OEP also tend to emphasize the importance of reducing barriers and increasing access to high-quality learning for all. They celebrate the use of emerging digital tools and networks to transform education (Cronin, 2017; Morgan, 2019; Nascimbeni & Burgos, 2016; Tur et al., 2020) in ways reminiscent of other, earlier open educational initiatives that became bigger and more prescriptive over time. Franklin however noted,

Anyone who has ever woven or knitted knows that one can change patterns, but only at particular points and only in a particular way so as to not destroy the fabric itself... The

web of technology can indeed be woven differently, but even to discuss such intentional

changes of pattern requires an examination of the features of the current pattern and an

understanding of the origins and the purpose of the current design. (p. 52)

Repatterning requires that we first understand the current design, pay attention to not only to the patterns

in the foreground, but also the deeper social, political, economic, and cultural patterns in the background

(McLuhan, 1964).

To achieve OEP's transformational aims, I suggest that open educators must carefully consider

the origins and purpose of open education's current designs, most of which have been shaped by big

foundations, venture capitalists, and corporations.

Throughout this chapter, I have identified patterns of scale associated with big and little

approaches to open education discussed in the academic literature. The remainder of my work involves

drawing a group of open educators into this exploration of scale and the impacts different approaches to

scale might have on learning conditions and practices within open education such that we may identify

points at which we might change our patterns without destroying the fabric of open education.

Gaps in the Literature

As discussed throughout this chapter, there is a growing body of research on open education.

Researchers have explored the consequences of specific pedagogical decisions (Almeida, 2017; Knox,

2013), links to neo-liberal agendas (Bogost, 2017; Moe, 2015) and Western domination of the field

(Adam, 2019; Crissinger, 2015); more localized approaches to open education have been recommended

(Christen, 2012). At the same time, gaps continue to exist, particularly with respect to scale, its

mechanisms and its implications. Within the wider context of educational technology, Castañeda and

Selwyn (2018) identified seven themes requiring more attention: learnification, pedagogy,

acknowledging the human aspects of education, (hyper)individualization of digital education,

commercialization, neoliberalization, and the need for constructive criticism. As I have argued, most of

these themes are applicable to open education *and* connected to an interest in scaling up. As a result, I believe that it is time to add scale and the "massification" of education to the list of emerging themes that require attention.

Chapter 4: Methodology and Research Design

In the previous chapter, I discussed how big foundations have set open education research agendas. Funes and Mackness (2018) further suggested that "motivated reasoning" and narratives "'that are confirmatory in nature' have reduced the credibility of the field of open education as an academic endeavour" (p. 123). In searching for a methodological approach to help me avoid falling into these same behaviours, I have adopted situational analysis, an approach that allows for greater reflexivity within educational research (den Outer et al., 2013). Situational analysis is a theory-methods package that uses maps and mapmaking to urge "people to clarify, to question, to argue, to (re)think, to keep on with analysis far beyond the usual formats of scholarly exchange (Clarke et al., 2018, p. 359). In this chapter, I offer a brief introduction to situational analysis methodology and methods and consider its suitability with respect to my research. I then describe my methods in more detail.

Foundations of Situational Analysis

Situational analysis is an emerging interpretive method of qualitative inquiry. Clarke (2003) developed situational analysis to extend the extremely popular and epistemologically sound grounded theory methodology.

Grounded theory. From its beginnings, grounded theory offered an approach to concurrently study action, process, and meanings (Glaser & Strauss, 1967). Unique to its approach is the coding and analysis of data that begins as soon as data becomes available (Glaser, 1978). Moreover, its approach to data selection and sampling is driven explicitly by substantive theories emerging from provisional analysis (Clarke et al., 2018). Clarke (2003) described grounded theory as a methodology that "focuses on finding new data sources (persons or things) that can best explicitly address specific theoretically interesting facets of the emergent analysis" (p. 557). Grounded theory seeks to generate new concepts and theories through abduction, the "research process of talking back and forth between the empirical

materials of a study and trying to analyze and conceptualize them more abstractly" (Clarke et al., 2018, p. 27). My exploration of scale within open education has been one of abduction. My questions emerged from a series of unexpected observations and my research has been a long journey in pursuit of doubt rather than fleeing from it (Charmaz, 2017).

The interpretive turn. While some grounded theorists applied constructivist framings (Charmaz, 2017; Strauss & Corbin, 1994), grounded theory's positivist roots have remained problematic for others (Clarke et al., 2018). Situational analysis is a hybrid approach that combines the above theoretical concepts with newer, post-structuralist ideas and is intended to push grounded theory "more fully around the interpretive turn" (Clarke et al., 2018, p. xxiv). These new post-structuralist underpinnings include taking into account non-humans and highlighting relationalities within a situation.

Taking the nonhuman into account. Building on Straussian interactionist sociology of work and Latour's (1987) actor-network theory, situational analysis explicitly includes the nonhuman. Clarke et al. (2018) explained:

> Having set up a binary—human/nonhuman—we must as poststructuralists immediately destabilize it. Not only are the boundaries between these categories rather leaky, but also there are several other loosely bounded groupings or classifications worthy of note here: hybrids, living nonhumans, cyborgs, discourses, and "whatevers" – everything else. In other words, it may be some form of continuum, or in Law's (2004) insightful words, a "mess." (p. 89)

Technological tools and spaces with which we regularly interact play a role in the development of this ambiguity as "we are no longer merely human but hybrid assemblages, most often somehow connected—wired even if wireless. *As this alters what being human means, we must figure out how to engage and address this methodologically"* (Clarke et al., 2018, p. 90). Situational analysis, therefore, acknowledges the importance of power and agency exerted by nonhuman actants within a

given phenomenon. Alonso Yanez (2013), for example, used situational analysis to problematize

"the taken for granted view that only relations among people constitute the social" (p. 60) and

investigated interactions between humans and non-humans. By asking "what" is acting and "how" it

is acting, Alonso Yanez (2013) described how conditions such as extreme heat and lack of humidity

in ecosystems and biophysical sites, led scientists to avoid fieldwork and appeared to disrupt or

even obstruct research "on the ground" in one of Mexico's Biosphere Reserves. The ways in which

humans and non-humans intimately co-constitute practices and situations are important

contributions to recent post-humanist and new materialism scholarship (Appleby & Pennycook,

2017; Sousa & Rocha Pessoa, 2019). In my work, and following these contributions, I discuss how

nonhuman educational tools play a key role within the field of open education.

    Highlighting relationalities. Another new theoretical underpinning of situational analysis is

related to Deleuze and Guattari's (1988) concepts of rhizomes and assemblages. They explained,

> What is lacking is a Nomadology, the opposite of a history… A rhizome does not begin
>
> and does not come to an end, it is always in the middle, between things, interbeing,
>
> intermezzo… The tree imposes the verb "to be," but the rhizome is made up of
>
> conjunctions "and…and…and…." There are within these conjunctions enough force to
>
> dislodge and unroot the word "is." (pp. 23-25)

In these ways, they sought to disrupt the equilibrium of current thought by noticing new linkages and

relationships. They emphasized the importance of assemblages, or the adding up of many "ands."

Interestingly, Deleuze and Guattari (1988) further described the relevance of these concepts to mapping

processes. They described the importance of building "a map that is always detachable, connectable,

reversible, modifiable, and has multiple entryways and exits and its own lines of flight. It is tracings that

must be put on the map, not the opposite*" (*p. 21). Building on these ideas, situational analysis "requires

us to attempt to 'see things in the middle' at one historical moment, while acknowledging that things are always changing, that our analyses are—*and can only be*—partially and temporally bounded" (Clarke et al., 2018, p. 197). As a result, "processes are foregrounded, emphasizing the fluidities of power relations" (Clarke et al., 2018, p. 81) in a way that focuses not only on what currently is, but also on what might be.

Situational Analysis and Mapping

In situational analysis, the key unit of investigation is "the situation," and the fundamental focus is "relationality." The situation is analyzed via three types of maps: situational maps, social worlds/arena maps and positional maps. The purpose of these maps is to encourage systematic thinking about a topic. These maps are revised throughout the research process and are intended to stimulate "the analytic imagination" by exploring tentative, partial, experimental possibilities (Clarke et al., 2018).

Situational maps. The goal of a situational map is to ensure the researcher has "a good grasp of the breadth and complexity" of a situation (Clarke et al., 2018, p. 227). Early versions of situational maps are meant to be messy. Later, neater versions are created to better define the situation and the relationships within it. To create my situational maps, I engaged my research participants in defining a situation of open education, paying close attention to the issues and relationships that mattered to them.

Social worlds/arena maps. Social worlds are groupings of assorted sizes that represent distinct yet fluid collectivities (Clarke et al., 2018). Ahmed (2002) described collectivities in more detail:

Collectivities are formed through *the very work we need to do* in order to get closer to others, without simply repeating the appropriation of "them" as labour or as a sign of difference. Collectivity then is intimately tied to the secrecy and intimacy of the encounter: it is not about proximity or distance, but a getting closer which accepts the existence of distance and puts it to work. (p. 570)

Ahmed's words point to the importance of valuing the differences between the experiences among and between groups of people in addition to the distances between them. Arenas of concern are made up of multiple social worlds committed to a particular issue (Clarke et al., 2018). Within arenas, "various issues are debated, negotiated, fought out, forced and manipulated by representatives" (Strauss, 1978, p. 122). Both social worlds and arenas are flexible and include individuals and groups with multiple memberships (e.g., a mother, a teacher, an open educator). As a result, these entities have blurry boundaries (Clarke et al., 2018). Mapping social worlds and arenas is a process of identifying how meaning making and commitments are organized and reorganized over time. In my social worlds/arena map, I explored a set of diverse social worlds involved in the arena of open education and how they influence the field's broader socio-economic, political, and, cultural contexts. It considers how corporations, institutions, and governments shape what open education looks like, how it functions and whose needs it serves.

Positional maps. The core goal of the positional map is to identify "topics of focus, concern, and often but not always contestation" (Clarke et al., 2018, p. 165). In seeking to move beyond "the knowing subject" (Foucault, 1973, p. xiv), these maps seek to represent the heterogeneity and richness of the positions held without linking them to actors. These maps can be helpful in identifying muted and quiet debates (Clarke et al., 2018). Positional maps were particularly useful in exploring the mechanisms of scale within open education that my research participants were often reluctant to discuss directly. In my positional maps, I considered how open education initiatives scale. I then used my positional maps to generate a series of "positional pairs" that helped explain how nuanced positional shifts at the small-to-medium scale can lead to dramatically different outcomes as open educational initiatives increase in size over time.

Ethical Considerations and Methods to Ensure Accountability

As already discussed, my methodological approach does not ascribe to objectivity. Like all

researchers, I bring to this work my own lens based on my personal, professional, and academic experiences as described in Chapter 1. In alignment with situational analysis (Clarke et al., 2018), I acknowledge my place as both a participant in and a researcher of the open online communities that I explore. I am committed to advancing participatory approaches to research that blur the lines between participants and researchers.

Moreover, I did not treat my participants as a representative or objective sample, but a theoretical sample. Theoretical sampling is an open and flexible method of data collection that explicitly seeks out diverse examples of relevant concepts that enable discovery and is particularly useful when studying new and underdeveloped areas of research (Corbin & Strauss, 2008). As a result, my participants are perhaps more accurately described as a non-representative sample, one that does not seek to achieve consistency or to control variables but is instead interested in following up on important theoretical leads (Corbin & Strauss, 2008). These participants were selected to generate interesting questions and to open space for new ideas. At the same time, the protocols of human research ethics approval set up the conditions of accountability around this relatively open-ended process. As noted in my previous work, "these protocols remind us to open conversations with a clear account of purpose and the likely destination of the words gifted to us" (Elias et al., 2020, p. 374). All elements of my research were approved by the University of Calgary Research Ethics Board.

Research Design

I kept my research design as simple as possible while addressing the methodological and ethical complexities that come with the application of situational analysis methodology and methods. In an earlier scale-related research project, my co-researchers and I selected participants based on their involvement with two specific online communities, Mastodon and Young Writers Project (Elias et al., 2020). The benefit of that approach was that it offered concrete examples from which ideas could be generated. However, because the field of open education often focuses heavily on the usage of specific

tools, for my doctoral research I decided not to define a "situation" in terms of a specific tool,

technology, or community. Likewise, I did not provide a definition of an open educator. Instead, I

sought out participants who self-identified as open educators with experience at a variety of scales.

As I undertook this work, I returned to the historical concerns regarding the tendencies for online

communities and open educators to engage in self-confirming behaviours (Funes & Mackness, 2018;

Mejias, 2013; Rolfe, 2016; Selwyn, 2016). Attending to the same criticisms, Mackness and Bell (2015)

were "conscious of the dangers of finding what we are looking for in our research" (p. 27). They

undertook intentional measures to counteract it, including allowing for confidential anonymous survey

responses that "enabled a light to be cast on what people are thinking, and not saying, in public and

semi-public forums" (p. 29). Although I was not initially considering using a survey, Mackness and

Bell's work offered compelling reasons to reconsider, and I began my study with an open call to

participate in an anonymous, online qualitative survey.

Phase 1 Participant Selection. In Phase 1, I recruited participants by sending an "open" call to

participate in the online survey via my Twitter and Mastodon social media accounts. According to

Twitter, my survey invitation was retweeted 42 times which resulted in 8,041 views and 468

engagements (defined as clicks anywhere on the tweet). Similar statistics for Mastodon are not

available. Where Mackness and Bell (2015) received 47 responses and 30,000 words from which to

begin their analysis, I received 20 completed responses and just over 6,000 words.

Initial online survey. My qualitative survey included background information about my

research in the form of an infographic (Figure 1).[5]

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[5] A larger version of this figure is included in the Appendix.

Figure 1

Infographic included in my online survey to provide background on my research to prospective participants.

RECONSIDERING SCALE IN

OPEN EDUCATION

What are the opportunities and limitations associated working at various scales?

WHAT IS OPEN EDUCATION?

The meaning of "open education" continues to lack a consistent definition. For the purposes of this research, the definition is broad. It includes work involving the use of Open Education Resources (OER), Massive Open Online Courses (MOOCs), Open Educational Practices (OEP) and Open Pedagogy. It also includes novel, experimental, connected and digital pedagogy and learning across both formal and information educational settings.

Since COVID-19 disruptions, most educators and their students have experienced education that might be considered "open" in one way or another. I invite you to share those experiences, focusing on the implications of scale, both big and small, on the learning experience.

Credit: OE Consortium

BIG AND SMALL OPEN EDUCATIONAL ELEMENTS

FUNDING
Open education might be considered big or small within the context of its overall cost and who is funding the work.

TOOLS
Open education might be considered big or small because of the tools used, including who owns the tool (corporate, institution, open source, etc.) and who controls their configuration and data.

CONTROL
Open education might be considered big or small in terms of the extent to which learning standards and expectations are being defined by learners, instructors, institutions, governments, etc.

NUMBERS
Open education might be considered big or small in terms of enrollment, participant numbers or anything else that can be counted (network size, interactions, followers, etc.).

SIZE & COMPLEXITY
Open education might be considered big or small in terms of actual contribution size from very short stories and small media files to complete textbooks, courses and learning systems.

INTENTION
Open education might be considered big or small in terms of its desire to support/ transform learning at the personal, class, community, national and/ or global level.

OTHER
In what other ways might we consider open education in terms of scale? Please share your thoughts and ideas.

RESEARCH APPROACH & PURPOSE

Although this research asks you think in terms of open education as big and small, it is typically not a case of one or the other. Rather, you will be asked to consider one open education project with which you are familiar.

You will then be asked to describe elements that you consider as "big" and "small." In that one example, you might identify elements that are big, small and mid-sized.

SMALL   BIG

The purpose of this phase of the research is to generate ideas to more further explore. **There are no wrong answers**.

The information gathered in this phase of the research will be used to inform two a collaborative mapping process and semi-structured interviews with a small group. The methodology is informed by Adele Clark's Situational Analysis. For more information please see Reconsidering Scale in Open Education <link needed>.

This infographic included the following definition of open education aligned with the findings of my

literature review as presented in Chapters 2 and 3.

The meaning of "open education" continues to lack a consistent definition. For the

purposes of this research, the definition is broad. It includes work involving the use of

Open Educational Resources (OER), Massive Open Online Courses (MOOCs), Open

Educational Practices (OEP) and Open Pedagogy. It also includes novel, experimental,

connected and digital pedagogy and learning across both formal and informal educational

settings.

Since COVID-19 disruptions, most educators and their students have experienced

education that might be considered "open" in one way or another. I invite you to share

those experiences, focusing on the implications of scale, both big and small, on the

learning experience.

The infographic then suggested some potential elements that respondents might consider classifying in

terms of "big" and "small," including funding, numbers, tools, size & complexity, control, intention and

other. The infographic further explained that "although this research asks you to think in terms of open

education as big and small, it is typically not a case of one or the other" and emphasized that "the

purpose of this phase of the research is to generate ideas to explore more fully. There are no wrong

answers."

The first question in the survey asked participants to describe a specific previous experience with

open education. The survey then asked four questions additional questions about that experience:

- Within the context of the open education experience that you described in the previous question,

  what elements of the experience might you classify as "big" and what elements of the experience

  might you classify as "small"?

- What impacts do you think the big elements had on the learning conditions and practices within

  the course or project you described for those involved? What opportunities and/or limitations did

they create in terms of the learning process?

- What impacts do you think the small elements had on the learning conditions and practices within the course or project you described for those involved? What opportunities and/or limitations did they create in terms of the learning process?

- Were there any elements that you struggled to categorize as either big or small? If yes, please describe those elements and why they were difficult to categorize.

All the questions were closely aligned with my research question and approved by the University of Calgary Research Ethics Board.

Open education experiences among participants. The purpose of the survey was to gather insight regarding scale-related implications of specific open educational experiences and, in alignment with situational analysis, to move beyond the knowing subject. As a result, the survey did not ask specific questions about each participant's level of expertise or work experience within the field of open education, but instead focused on a specific experience with open education as shared by the survey respondents. The experiences shared by my survey respondents s involved a wide array of open education experiences both in formal post-secondary and informal settings. None of my survey respondents referenced open education within the context of K-12 schools. I have classified the experiences they described into four areas of experience (Table 1). For example, Respondent 11 wrote, "I am a music teacher, now an OER librarian, and have incorporated open practices throughout my over 15 years of teaching. One of my favorite activities was inviting students to apply an open license to their compositions." In this case, I categorized their experience as Teaching/ Facilitation and Community/Policy Development.

Table 1

Phase 1 Research Participant Areas of Experience

Respondent	Participation	Teaching/ Facilitation	Resource Creation	Community/ Policy Development
1				X
2				X
3				X
4	X			
5		X		
6		X	X	
7				X
8	X	X		
9			X	
10		X	X	
11		X		X
12				X
13			X	X
14	X	X		
15			X	
16	X	X		
17			X	
18		X	X	
19	X			X
20		X	X	X

Of the 20 survey participants who completed the survey, five described experiences participating in open online courses, nine described experiences related to teaching and facilitation; eight described experiences creating resources; and nine discussed developing communities, networks, and policies to support the ongoing growth of open initiatives in a variety of forms.

Participation. Five participants described participating in open online courses. In several of these cases, the responses suggested that they were likely lightly involved in and/ or new to open education. For example, Respondent 4 described "participating in an open online course. I have participated in a few of these over the past number of years." In other cases, participation in online

courses was combined with other experiences suggesting a much deeper involvement in the field. Respondent 8, for example, explained, "I studied for a BA and an MA with the UK Open University, and I was on the OU staff from 1990-2012." Respondent 14 shared, "I have been both a participant and a teacher in a few iterations of the open digital storytelling course ds106."

Teaching/ facilitation. The Teaching/Facilitation experiences described by survey respondents suggested levels of experience with open education that also varied from low to high. Respondent 5 described how they "used open resources, namely articles, videos and pictures to combine with formal teaching" in simple ways. Other respondents described experiences that suggested a high level of expertise and experience with open education. Respondent 10 explained how they had built and run their own MOOC with the help of sites like Stack Overflow and CodePen. Respondent 20 described "developing an open online course, adopting textbooks for teaching classes and working as a BC Campus Open Education fellow."

Resource creation. Like the above categories, respondents' descriptions of open resource creation showed variation. Respondent 9 explained that they "have been creating materials for language students and using Creative Commons (CC) materials, attributed, and properly used according to the CC licence since 2008." Repsondent 6 described how they "served as an expert reviewer on one of the first OpenStax projects. I have used that textbook in my Physics teaching since doing that work in 2012." Respondent 10 wrote about creating and teaching an "#OpenFlip series of cMOOCs. I ran the first one in 2014 and am currently running a bilingual version (English/ Spanish) this summer."

Support & community development. Finally, 45 per cent of my survey respondents described work related to supporting the ongoing development of open educational communities, networks and, policies as seen in the following examples. Respondent 1 explained how they supported national OER initiatives, providing technical and tactical/ implementation advice to program managers. Respondent 2

described their work "leading a large grant at a community college working with faculty to design OER" and Respondent 3 explained that they have "helped to set up a province-wide network of librarians and academic developers to promote the usage of OEP and OER." Respondent 12 described their work "leading a process to consider adoption of an open access policy at my institution." All the responses related to Support & policy development suggest high levels of expertise within the field of open education.

Demographic Information. They survey also asked the following question to gather demographic information using optional free text fields: As a part of this research, we would also like to learn a little more about our respondents in terms of: Gender, Race/ethnicity, Ability/disability, Where you feel "local" and Other. While none of the optional demographics questions is directly related to my research, put together they do provide some insight into the diversity of my research participants. Moreover, the open-ended response format gave them an opportunity to offer additional insight into their identities on their own terms. Here, I use this information to create a picture that some offers insight into my research participants while remaining intentionally incomplete.

Eight resurvey respondents identified as female, six as male and two as non-binary/diverse. In response to the question "where do they feel local," answers included Canada, specific parts of Canada (i.e., West Coast, BC, Maritime Canada), the United States, specific places in the United States (i.e., Oklahoma, Green County, Tennessee), Latin America, the UK, Scotland, and Egypt. One survey respondent indicated that they were "a Canadian who has lived 25 years in México," and another one wrote "I feel 'local' at Twitter." In terms of race/ ethnicity of the participants who responded, 11 identified as white/ Caucasian, one identified as a "mix European with Cree background" and one responded that they "don't fit into any of these categories. Not white or Black or Indigenous or whatever." Of those who responded to the ability/disability question most responded with some version

of "abled." One survey participant identified as "abled but with an invisible learning disability."

Initial analysis. In alignment with situational analysis, my analysis began by coding my

research data as it was generated concurrently with data collection. Coding involves "naming segments

of data with a label that simultaneously categorizes, summarizes, and accounts for each of data. Coding

is the first step in moving beyond concrete statements in the data to making analytic interpretations"

(Charmaz, 2006, p. 43). I began by using open coding to quickly but carefully organize the data

gathered in my initial survey. Specifically, I identified words and phrases referring to the processes,

tools, and technologies; human and non-human actors and actants; feelings, thoughts, and concerns;

motivations, behaviours, and consequences; and other concepts and ideas that my survey respondents

associated with open education at a variety of different scales. This coding process led to a list of 150

provisional open codes. These codes were used to populate the initial messy situational map (Figure 2)[6].

Figure 2:

Messy map containing the initial open codes generated from the online survey

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[6] A larger view of this figure is included in the Appendix.

Throughout my all of my data gathering and analysis I have assumed that all my research participants gave honest and truthful responses and that they have been honest about their knowledge and experience within the field of open education.

Phase 2 & 3 participant selection. For Phases 2 and 3 of my research, I identified six participants who were interested in having deeper conversation about the implications and mechanisms of scale within open education. I first sought to engage survey respondents who had indicated an interest and willingness in participating in these phases. I sent the 12 survey respondents who indicated an interest an invitation. After one follow up, four of them had responded, agreed to participate, and returned their signed ethics forms. I then recruited two additional participants who expressed interest in my research when it was discussed or presented at conferences. All six participants have been deeply engaged in open education for at least seven years. They had all been involved in at least two of in Teaching/ facilitation, Resource creation, and Community/policy development. During our focus group sessions, they consistently demonstrated their expertise related to open education. Together, they represent a variety of professions and locations as described in Table 2. All of them except for one work in a university setting. For the purposes of my research, I have given these participants pseudonyms.
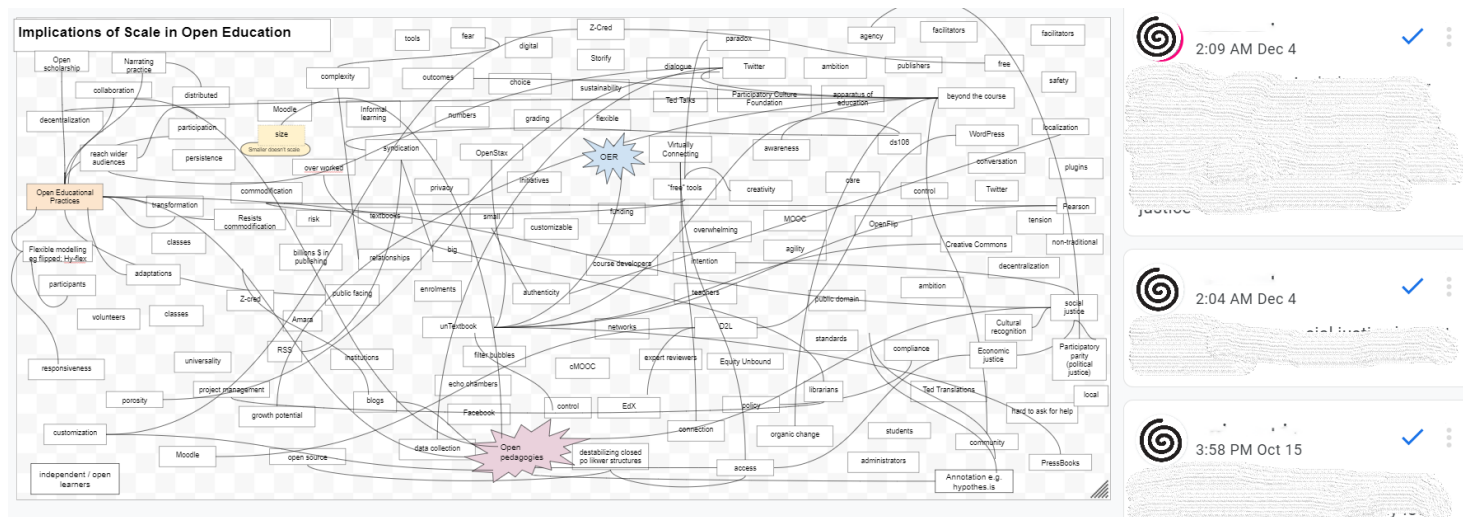
Table 2

Phase 2 & 3 Research Participants Information

Pseudonym	Profession	Employer Type	Location	Status
Jonah	Educational technologist	Independent Contractor	Saskatchewan	Active
Charles	Educational administrator/ Instructor	University	British Columbia	Semi-retired
Kathleen	Librarian	University	Alberta	Active
Tracy	Learning Designer/ Instructor	University	Ontario	Active
Tess	Professor	University	Ontario	Active
Sara	Professor	University	Egypt	Active

Collaborative map annotation. In the second phase of my research, I invited the above six open

to participate in a collaborative mapping process. Within the field of open education, the use of

collaborative documentation is common. Bali et al. (2015) used a collaborative writing document as a

starting point for their collaborative auto-ethnography. Similarly, in their development of a collaborative

document that they referred to as the "Untext," Hamon et al. (2015) found that these types of

collaborative practices generated important ideas and supported thinking in non-linear ways, that they

suggested moved them "beyond traditional notions of rigor" (p. 8). In my research, my research

participants completed a collaborative mapping activity within a private mapping space built in Google

Draw. I asked this group to draw lines between the elements of the messy situational map and to

annotate these relationships (Figure 3).

Figure 3

Image of messy map with connections and annotations added by research participants

Although Clarke et al. (2018) described the mapping processes as the work of an independent

researcher, they also explained:

> In myriad ways, [situational analysis] maps and mapmaking provoke all kinds of
>
> engagements, operating as what Foucault (1977) called "incitements to discourse," liftoff

devices raising the level and intensity of exchanges. They are "pushy devices"—urging

people to clarify, to question, to argue, to (re)think, to keep on with analysis far beyond

the usual formats of scholarly exchange. (p. 359)

As a result, my collaborative mapping activity seemed like a natural extension of situational analysis methods. The success of this collaborative mapping exercise was mixed.

During the pandemic, many open educators found themselves supporting colleagues and, in some cases, entire institutions suddenly required to teach online. As a result, identifying participants for my study between October and December 2020 was more difficult and took longer than expected. At the same time, the distributed and asynchronous design of the collaborative mapping activity allowed participants to engage when they had time and, therefore, supported participation and accommodated an extended timeline. Participants engaged by adding lines to connect elements, comments, colours, and shapes, and the relational activity did appear to support an elevated level of reflection among participants. In the first focus group, Tess noted, "I became quite aware of my bias and my own particular interest in magnifying some of the connections." In the second focus group, Kathleen noted that the activity "definitely forced me to reflect."

At the same time, the map quickly become overwhelming, especially for late-arriving participants. Charles noted that it was an activity best done "in small bites." Moreover, due to the protracted period over which the annotating took place, it was difficult to generate interaction and sustain engagement between participants.

After the six participants completed their relational map activities, I sorted and cleaned the map. First, I dropped the elements that turned out not to be of interest to my research participants (Clarke et al., 2018). I then organized the remaining elements, preserving the relationships and annotations. This next analytical exercise resulted in a more selective set of 75 codes that I colour-coded to define six

conceptual categories (Figure 4) more clearly.[7] I explore these themes, connections and relationships further in Chapter 6.

Figure 4

Selective codes organized into six categories and colour coded
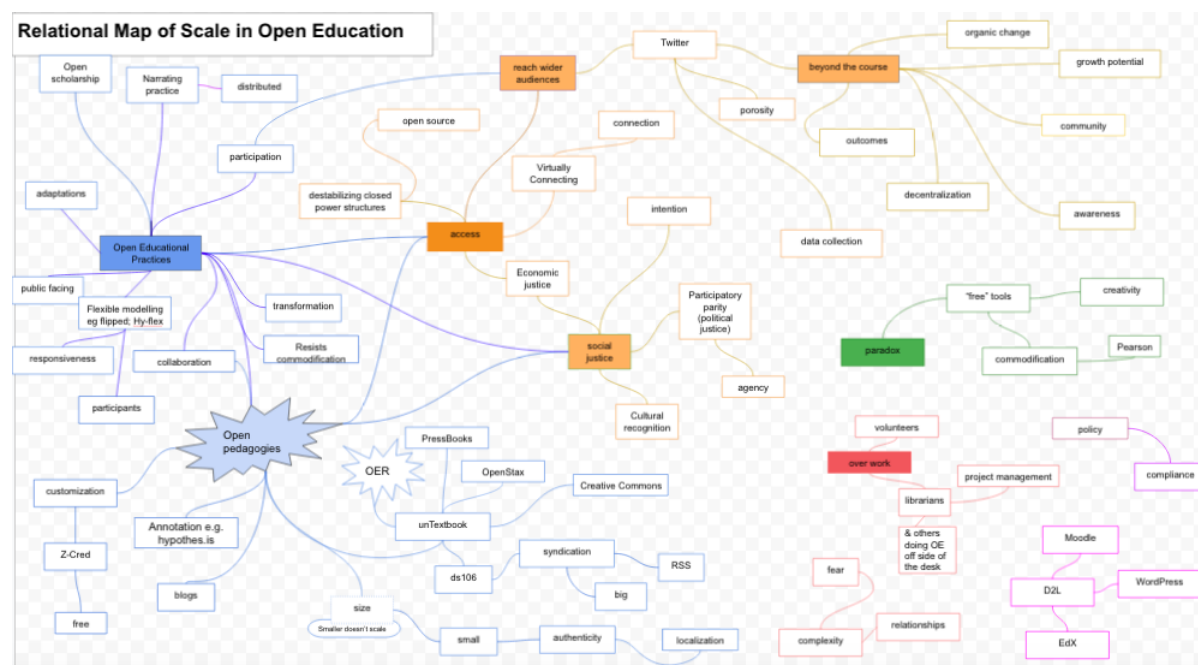
Collective analysis via semi-structured focus group interviews. In the third phase of my research, I invited the six people who participated in the collaborative mapping to attend an online, follow-up focus group. I ran two one-hour focus groups with three participants in each. The focus groups were guided by the following four questions:

- How do your personal experiences align with the ideas and themes that have emerged through our collaborative mapping process? Discuss what resonated and what did not and why.

- What ideas and themes surprised you the most? Discuss why.

- Were there other issues raised in the mapping process that you would like to discuss more now?

---

[7] A larger version of this figure is in the Appendix.

If yes, allow the participant to lead the conversation

- Is there anything else you would like to add? If yes, allow the participant to lead the

  conversation.

I recorded the focus groups and generated auto-transcripts. I then edited the transcripts and sent them to the participants for review. In keeping with situational analysis, the goal of these focus groups was to generate rich discussion and uncover additional questions. The richness of these conversations exceeded my hopes; I am grateful for the participation, engagement and commitment of these participants who carved out time from their tremendously busy schedules to participate in my research.

Ongoing coding and analysis. First, I sorted and organized the relational map and manually mapped every comment generated by the participants onto the map (Figure 5).

Figure 5

Image of relational map with handwritten annotations
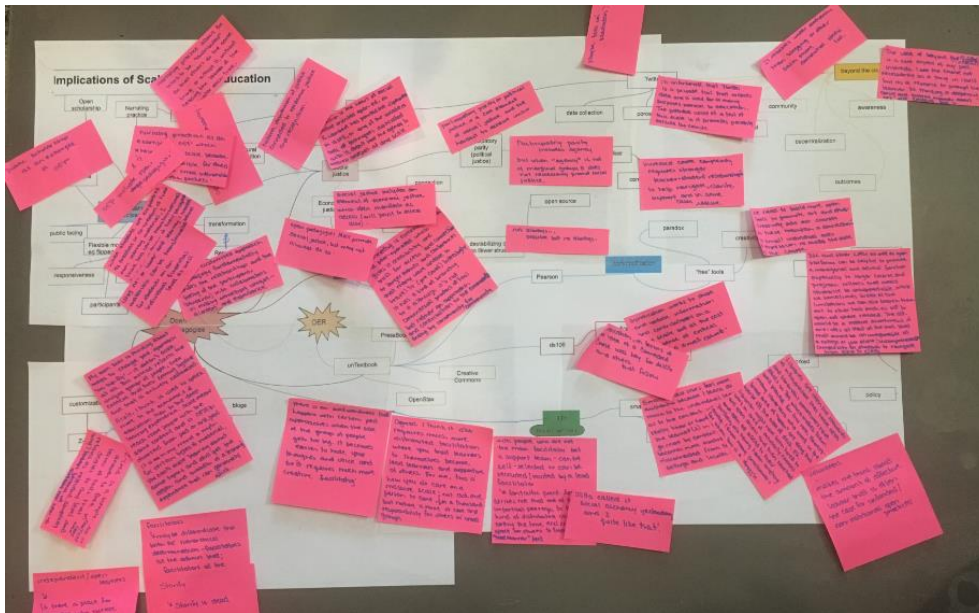
I then used the selective codes and categories generated by my research participants to sift through the large volume of qualitative data that had been generated in the forms of online survey responses, relational map annotations and focus group transcripts. Following guidance from Clarke et al. (2018), I

did not seek to solve the "messes and confusion in the data or situation" but instead focused on "describing them carefully and analyzing them as far as possible in the moment, as is reasonable for the project" (p. 163). As a result, I continued to adjust these codes in alignment with Charmaz's (2006) sensitive and flexible coding approach. Where additional codes or categories emerged during the mapping processes, I returned to my raw data to determine if I had accidentally removed them during my open coding or if they were absent in the original survey responses. For example, when the concept of "efficiency" emerged while creating my social worlds/ arena map, I first went back to my initial open codes and then to my raw survey data to search for the term. Through this process I confirmed that the word had not been used by any of my survey respondents and, therefore, had not been included in the relational map. Through this process I confirmed that the word had not been used by any of my survey respondents and, therefore, had not been included in the relational map. Using this approach, I iteratively assessed the adequacy of my selective codes and identified conceptual categories (Thornberg & Charmaz, 2014). Moreover, "missing" codes, like the one described above, served to suggest silences requiring further investigation (Clarke et al., 2018).

Social worlds/ arena mapping. Using these selective codes and conceptual categories as a starting point, I then developed a social worlds/arena map. For each of the social worlds implicated within the arena of open education, I conducted additional research to answer the following questions posed by Clarke et al. (2018, p. 158):

- What is the work of this world?

- What are the commitments of this world?

- How do its participants believe they should go about fulfilling these commitments?

- How does this world describe itself—present itself—in its discourse(s)?

- How does it describe the other worlds in the arena?

- What actions have been taken by this social world in the past? What actions are anticipated in the future?

- How is the work of furthering this world's agenda organized?

- Are there other interesting nonhuman actants linked to this world? If so, why, and how?

- What other worlds seem to matter most to this world?

- What else seems important about this world?

- Do you need to collect further data about this world? If so, what kinds of data?

The output of this process was a social worlds/ arenas map that highlighted the situation of open education at the nexus of a series of massive and powerful social worlds (Figure 5). It was a picture of open education that my research participants acknowledged but were reluctant to discuss and suggested a situation of open education dramatically different than that generated in the collaborative relational map.

Theoretical coding. As noted above, while building and analyzing my social worlds/arenas map, I began to notice that the selective codes generated by my research participants did not on their own explain the emerging contradictions seen in my data. As a result, throughout remainder of my analysis, I adopted a practice of *theoretical coding*. Through theoretical coding researchers import additional codes and categories from outside the data which are then used as analytic tools and lenses (Thornberg & Charmaz, 2014). Theoretical codes can include ideas, terms, and abstract models that "specify possible relationships between categories you have developed in your focused coding … [and] may help you tell an analytic story that has coherence" (Charmaz, 2006, p. 63).

At the same time, as argued by Haraway (1997), it is critical to clearly explain why specific theoretical codes have been drawn into the research process. She explained:

The point is to make a difference in the world…. To do that, one must be in the action, be finite and dirty, not transcendent and clean. Knowledge-making technologies, including crafting subject positions and ways of inhabiting such positions, must be made relentlessly visible and open to critical intervention. (p. 119)

When I began to see that the ideas emerging in my collaborative relational map and in my social worlds/ arena map were apparently contradictory, I struggled to reconcile these differences. A process of abduction followed as I moved back and forth between the empirical data gathered during my study and my attempts to analyze and conceptualize my emerging maps ensued (Clarke et al., 2018). As discussed in Chapter 1, an accidental encounter with the work of Ursula Franklin (1999) led me to consider drawing in scale-related theoretical codes associated with prescriptive and holistic technologies. At that point, my online survey was complete. I had developed my social worlds/ arena map and approximately half of my research participants had completed the collaborative mapping activity. Where my analysis of the social worlds implicated in open education clearly showed that the vast majority of them were explicitly interested in learning at scale as a means of increasing efficiency and maximizing profits, it was already becoming clear that my research participants rejected this approach to scale, consistently complicating the concept and instead focusing on the elements within the relational map that we of interest to them. I struggled to reconcile these emerging patterns with the patterns seen within my social worlds/ arena map. First listening, and later reading, Franklin's (1999) thoughts about the different mechanisms of scale, I suddenly saw a potential path forward in my research.

Returning to the open education literature seeking out specific references to these codes, I found that where earlier open and distance education regularly referenced these topics, they were absent within the literature of contemporary, internet-enabled open education. I then undertook close reading of the literature and discussions with open educators to better understand how and why these concepts were

not discussed in the contemporary open education literature. Eventually, I came to understand that, as discussed at the end of Chapter 4, within the context of internet-enabled open and free movement of information, many open educators had come to believe that the rules of prescriptive production no longer applied (Moe, 2015; Stewart, 2013). This realization helped me to better understand the ambivalence of my research participants with respect to scale and encouraged me to draw these "lost" concepts back into my research involving contemporary internet-enabled open education. Throughout the remainder of my research, these theoretical codes helped me to begin to recognize that my open educator-research participants tended to have a tacit awareness of holistic growth that they struggled to clearly articulate, as discussed in Chapter 6 and to differentiate nuanced differences in the scale-related positions taken by open educators and their implications as discussed in Chapter 7. As a result, I suggest that theoretical coding is of particular importance within situational analysis in which the goal is to elucidate differences and make silences speak (Clarke et al., 2018).

Trustworthiness of Data

I used Qualtrics software to conduct my survey and the original, unaltered data remained within the tool's database. The focus groups were recorded in Zoom and auto transcribed using the in-built transcription software. I then reviewed and corrected the auto-transcripts to improve their alignment with the recordings. Finally, I sent each focus group participant their transcript to review and correct. Both the collaborative mapping activity and focus group transcripts were stored in Google Drive and audit trails were maintained using its in-built version history.

I conducted regular debriefs with my supervisor during my data collection and analysis process. I also presented my preliminary findings at conferences and authored a work-in-progress article to gather additional input from open educational researchers and practitioners. At the October 2020 OE Global Conference I ran an asynchronous session where I introduced my research and approach to

collaborative relational mapping. I then invited conference participants to engage in the collaborative mapping activity that I later used with my research participants. This practice run allowed me to gather feedback on my approach and the mapping activity itself. In April 2021, I presented my preliminary positional maps and proposed the use of Franklin's prescriptive and holistic technologies to analyze the data at the OER21 Conference. I received positive feedback from the attendees regarding the maps and the use of Franklin's concepts. Questions asked during that session informed revisions to my literature review, particularly Chapter 2 and my writing of Chapter 7. In October 2021, I submitted an article based on my findings from the relational mapping activity to a special issue of the Journal of Interactive Media in Education dedicated to the work of Global OER Network graduate students. I received feedback from two peer reviewers and the editors. Based on this feedback, I added information about open educators and OEP in Chapter 3. Finally, in April 2022, I presented my social worlds/arena map at the OER22 Conference where feedback was again gathered that was later incorporated in Chapter 5.

"A Situation of Open Education"

In keeping with Clarke et al. (2018), each of the next three chapters introduces a specific mapping technique, the map generated during my research and my analysis of that map. In each of these chapters, I weave together theoretical codes associated with prescriptive and holistic technologies, the data gathered from my research participants and additional independent internet-based research to tell a coherent analytic story of the mechanisms and implications of scale within open education. Using this approach, each map offers a rich and deeply personal description of open education. Moreover, each of these maps is not definitive, or even representational, but instead, constitutes a dynamic representation of a complex field that, when put together, help to better understand the whole (Ellingson, 2014). The work presented in the following chapters is, therefore, necessarily partial, and incomplete, representing not *the* situation of open education, but instead *a* situation of open education, whose dynamics I explore more closely in the following chapters.

Chapter 5: Social Worlds/Arena Mapping – Prescriptive Patterning

Having set the stage for my research throughout the first four chapters, in the next three chapters I present my findings and analysis associated with each of situational analysis's three map types. In this chapter, I introduce the social worlds/arena mapping process. I then present a map that situates open education within broader socio-economic, political, and cultural contexts and describes nine big and powerful social worlds active within the arena of open education that I then use to present and discuss my findings.

Social Worlds/Arena Map of Open Education

The purpose of a social worlds/arena map is to "situate the situation of inquiry more broadly" to better understand the current designs affecting a situation (Clarke et al., 2018, p. 150). Colapietro (2011) further explained that situations themselves must be situated within a multiplicity such that "a critical understanding of the power, limits and mutability of these situations becomes (at least) an imminent possibility and (at best) a transformative factor" (p. 32). The purpose of a social worlds/arena map is, therefore, to analyze social designs. Rooted in the Chicago School and post-structuralism, this map type allows the analyst to account for different groups whose activities encounter and confront one another within an arena of concern. More specifically, it explores two analytical questions: 1) Who cares about this situation? and 2) What do they want to do about it? As a result, a social worlds/arenas map is important in terms of grasping the big picture, something that is rarely undertaken in qualitative inquiry (Clarke et al., 2018).

By categorizing the open and selective codes shared by my research participants, I identified and mapped a series of social worlds connected to open education. Although I was unable to map every organization mentioned by the participants, I have mapped a representative sample. I then did additional internet-based research to gather more information about each of the social worlds identified. (See Chapter 4 for a full list of the questions that guided this analysis.) The output of this process is a Social

Worlds/Arena Map of Open Education that exposes prescriptive patterning in many of the social worlds

associated with open education (Figure 6).[8] It further highlights open education's entanglements with a

complex series of big and powerful social worlds.

Figure 6

Social Worlds/Arena map of Open Education
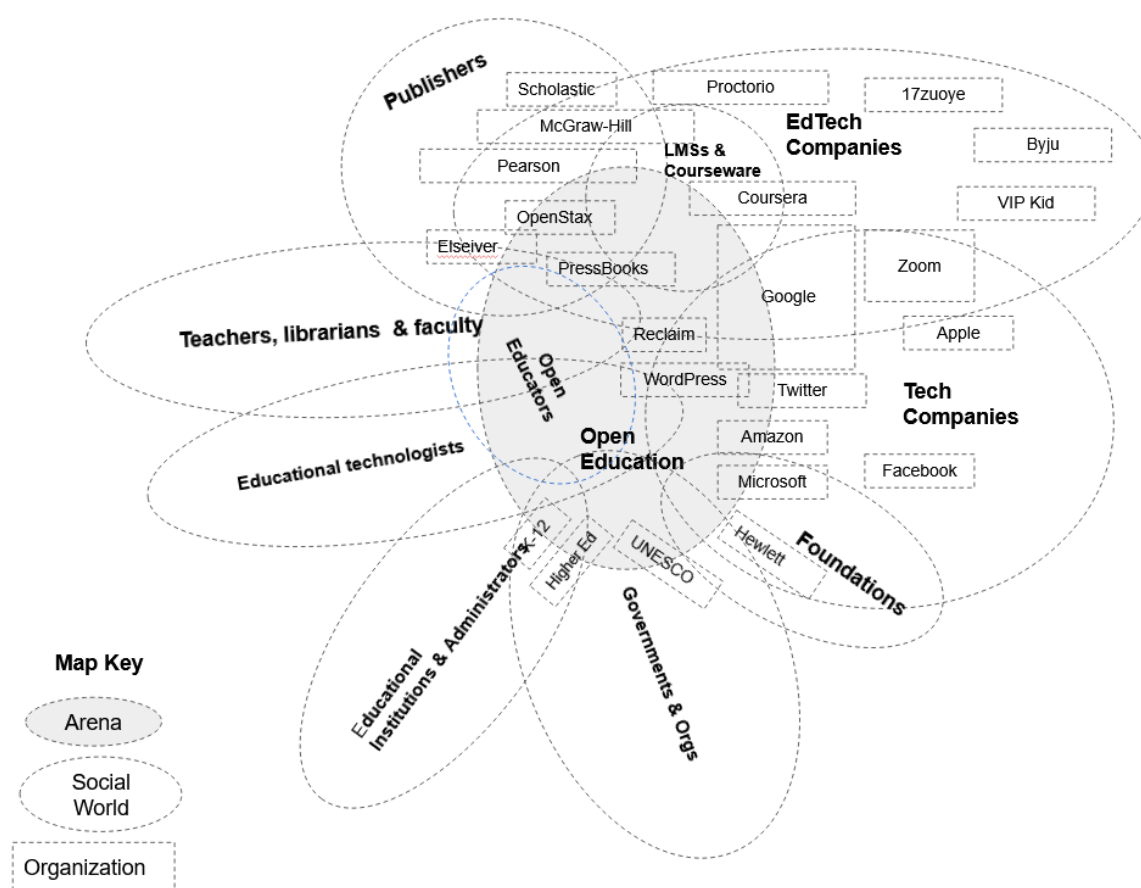
Overlapping and Converging Social Worlds

      In the following section, I describe nine big and powerful social worlds active within the arena

of open education, including textbook publishers, EdTech companies, LMSs & Courseware, broader

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[8] A larger version of the Open Education Social Worlds/Arena Map in included in the Appendix.

technology companies, philanthropic foundations, governments and governmental organizations, educational institutions and administrators, teachers, librarians and faculty and educational technologists. Drawing from contributions in all three phases of my research (surveys, collaborative mapping, and focus groups) and my own additional independent research, I describe the impacts of these social worlds within the arena of open education. A tenth social world, open educators, is described in more detail in the next chapter.

An important pattern seen in the social worlds/arena map is the widening sphere of technology companies, particularly the biggest five (Amazon, Apple, Microsoft, Google, and Facebook). Not only do they impact the arena of open education directly, but they also have an indirect impact through their influence through philanthropic foundations, governments, and educational institutions. The Social Worlds/Arena Map of Open Education also highlights the ongoing convergences of textbook publishers, EdTech companies and larger technology companies. Although I explore these social worlds as separate entities, the implications of these dynamic intersections and convergences trending towards ever-increasing "massification" should not be overlooked.

Textbook publishers. The social world of academic textbook publishers is dominated by a small number of large companies (Figure 7).

Figure 7

Publishers as a social world
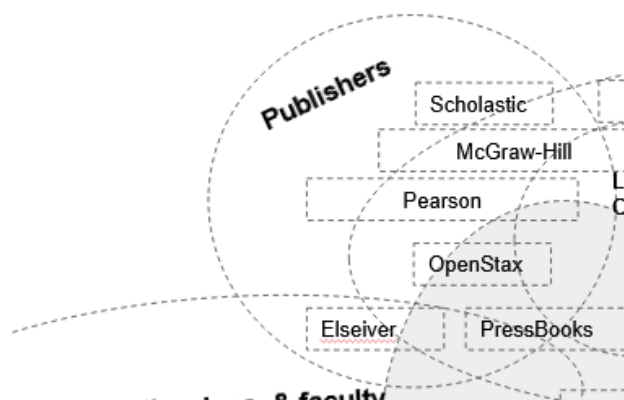
These textbooks publishers have historically applied a prescriptive, industrialized model of production, defined by the division of labour through which authors, editors, designers, producers, and printers perform specific tasks as illustrated by Peters (1989) (Figure 8)[9].

Figure 8

Industrialized approach to open education as illustrated by Peters (1989)
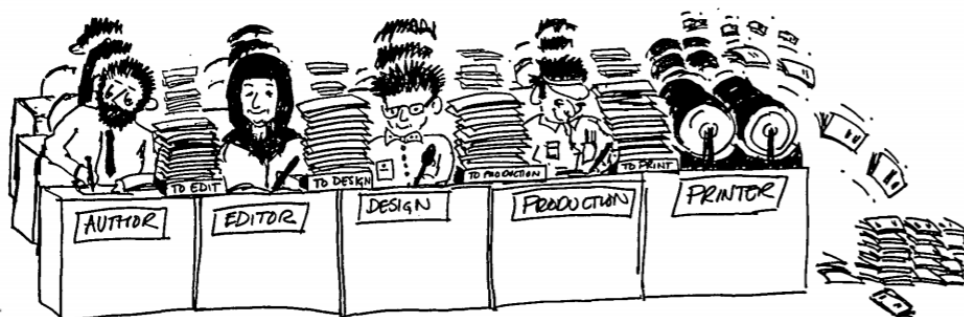
Although the large publishers do not themselves tend to engage within the arena of open education, OER and the field of open education emerged in response to their copyrighted content.

Copyright. One survey participant noted that "openness in education is very closely tied to the commodification of knowledge through copyright." Another survey respondent similarly noted that

"there are systemic issues at play at the *big* level. Why does Pearson publishing, etc. NOT want teachers to know about OER, etc.? There are billions of dollars at play." In fact, these five publishers generate approximately $12.2 billion in revenues per year (Bookscouter, 2016)

Open textbooks. In response to these for-profit publishers, several open, not-for-profit textbook publishers have emerged, including OpenStax and Pressbooks. A survey contributor wrote,

The OpenStax project, even from its inception, was big… OpenStax is as fully realized as I can imagine a "big" open education project getting… The number of students reached by

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[9] Image copyright managed by Taylor & Francis who allow reuse of content for thesis and dissertation usage.

those resources number in the millions - that's substantial money that didn't have to be

spent on major-publisher textbooks.

Although these open publishers are small in comparison to the big five publishers, they are big in

comparison to most of the open education projects described by my research participants. Moreover,

like most big open education, OpenStax is funded by foundations that include the Chan Zuckerberg

Initiative, Gates Foundation, Google Inc., and the Hewlett Foundation (OpenStax, n.d.). As a result,

rather than seeking direct payment from students for copyrighted content, these open publishers provide

access to textbooks whose production has been funded primarily by philanthropic foundations

associated with big technology companies.

"Zero Textbook Cost" programs, or "Z-cred," are another open education initiative related to

open textbooks in that they are full-length university programs that can be completed without incurring

any textbooks costs. In the relational map, Charles suggested that Z-cred offers a simple approach to

open education because it is easy to scale. "Z-cred is a simple answer to free in terms of costs that scale

to any level and retains its relevant simplicity. Why? Because we already know how to use textbooks

that way." Open textbooks and their related open education initiatives, therefore, tend to be examples of

large-scale open education seeking to destabilize closed power structures of copyright without re-

patterning their prescriptive production approaches to scale, something that is likely to benefit

foundation funders. Despite widespread celebration of the savings to students achieved by open

textbooks (Jhangiani et al., 2018), there has been little discussion as to *why* technology-funded

foundations care about open textbooks and *how* destabilizing copyright-centric publishers might be

aligned with their scale-centric business models. I suggest that destabilizing academic publishers may

support large technology companies in gaining increased access to, and perhaps control of, educational

audiences through the easy-to-scale, prescriptive processes associated with open textbooks.

The surveillance pivot. Although textbook publishers are typically associated with material, printed textbooks, they are in the midst of a pivot. In fact, these publishers do not to describe themselves as publishers at all. Instead, Pearson describes capabilities that "include combining world-class educational content and assessment, powered by services and technology, to enable more effective teaching and personalised learning at scale" (Pearson, n.d.) For its part, McGraw Hill generated more than 50 per cent of its revenue from its digital business for the first time in 2019 and has now partnered with the surveillance software company Proctorio "to seamlessly incorporate assessment integrity tools" (McGraw Hill, n.d.). In these ways, publishing companies are becoming EdTech companies seeking to scale up by investing in digital platforms, data-gathering, algorithms, and surveillance. The open textbook publishers are no different. One survey contributor noted,

> All of the foibles of large educational projects are seeping into the OpenStax project, too. I have a real question of the number of different ways that OpenStax is collecting student data and the temptations they're opening themselves up to. Resources for education shouldn't have to associate with centralized collection of student data, and a truly creative step would have been to use a tool like OpenStax Tutor or Rover and provide the resources in "small" and decentralized ways that keep student data in the control of individual institutions.

Although printed educational materials, and perhaps the notion of the textbook itself, are becoming rarer, both open and closed publishers appear to be continuing to extend their reach by moving increasingly into digital spaces and adopting *more* prescriptive approaches to teaching and learning.

EdTech companies. In addition to the above publishers entering the EdTech space, educational technology companies (Figure 9) raised an estimated $7 billion worldwide in 2019 (HolonIQ, 2020).

Figure 9

EdTech Companies as a social world
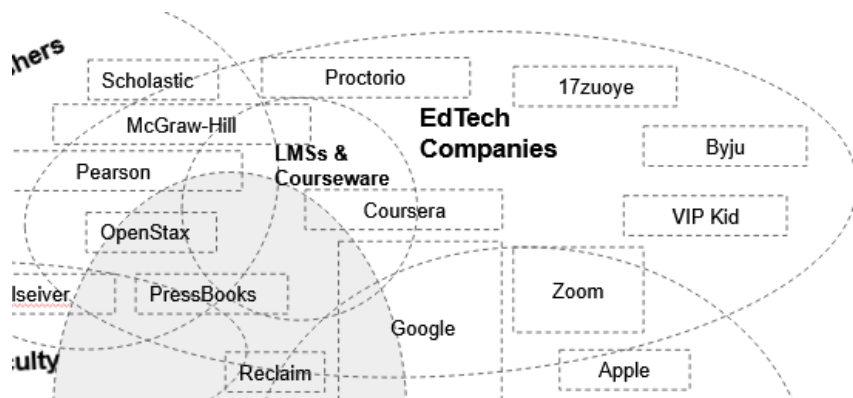
Although MOOC providers like Coursera and surveillance software, including Proctorio, have garnered

the most attention among open educators, the largest EdTech companies, many of which are based in

China (i.e., VIP Kid, Byju, 17zuoye) do not directly impact the open educational arena, but are

interested in maximizing gain for their investors by scaling up digitally-enabled education in

increasingly prescriptive ways.

   *Acculturating conform***ity.** Within the EdTech social world resides the smaller social world

related to the LMS and other courseware that has much closer ties to open education. Charles

commented in a map annotation,

   LMS platforms can be helpful to provide a managerial and administrative function,

   especially to larger course and program roll outs that would otherwise be unsupportable.

   While we sometimes bristle at the limitations, the alternative would be a massive

   assortment of one-offs that would be unimaginable at a college or university scale and

   involve incomprehensible complexity for students to navigate from class to class.

At most educational institutions, LMSs have become essential infrastructure that appear to support

further standardization of course offerings for both staff and students.

Co-opting open language. Beyond their explicit interest in scaling up their user numbers, EdTech companies describe themselves using many of the concepts associated with open education, including accessibility, transformation, and high-quality education. Reviewing several LMS websites, I found that they seek to deliver "the best education possible . . . accessible for all learners" (Blackboard, n.d.) and to "unlock learner potential at scale" (D2L, n.d.) in "a world where anyone, anywhere has the power to transform their life through learning" (Coursera, n.d.). Co-opting the language of open education to maximize EdTech gains may be akin to the "greenwashing" seen throughout environmental movements; as terms gain widespread acceptance, they tend to be used for commercial gain. Within the context of open education, the ambiguity of "open" terms, a reliance on foundation funding and scale-related silence among open educators appears to have facilitated this co-option. Incumbents have sought to maintain their positions while new entrants have taken up space in the EdTech market. All use the language of open education as a marketing tool to generate profits (Weller, 2014).

Tiny re-patterning efforts. In contrast to the large EdTech companies that make up most of the EdTech social world, one much smaller EdTech company, Reclaim Hosting, was mentioned by several research participants. According to its website, it "provides institutions and educators with an easy way to offer their students domains and web hosting that they own and control" (Reclaim Hosting, n.d.) Watters (2015) described the ways their technology gives students the opportunity to set up their own website where they can install and experiment with digital tools and applications and become their own system administrators. She went on to explain why the provisioning of these types of tools to students matters:

> It is important to have one's own space to develop one's ideas and one's craft. It's important that learners have control over their work—their content and their data… This means they have some say—although not complete—over their personal data, and in turn they begin to

have an understanding of the technologies that underpin the Web, including how their work

and their data circulate there. (Watters, 2015, paras. 7-8)

Students, teachers, and educational technologists working within these sites see and manipulate the

inner workings of their applications and tools. As a result, Reclaim Hosting appears to make the

material construction and the interactions of users' digital world more visible and allows users to

practice exerting agency over them. Reclaim Hosting is not funded by big corporations, venture

capitalists or philanthropic foundations but is, instead privately owned by several educational

technologists. It serves as rare and tiny example of an EdTech company seeking to re-pattern

educational opportunities in more holistic ways aligned with stakeholder capitalism (Schwab, 2021).

Tech companies. The open educators who participated in my research referred to a wide variety

of both open source and commercial technology companies and tools (Figure 10).

Figure 10

Tech companies as a social world
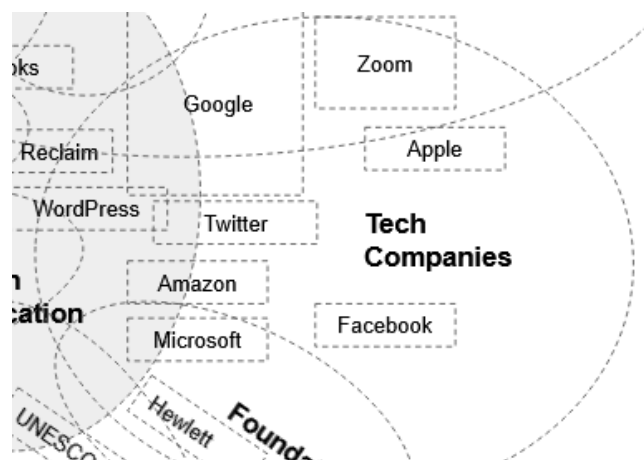
Open-Source Software. Many of my research participants who showed a preference for small,

more holistic approaches to EdTech also supported the use of open-source software. Some of the

participants referenced the use of open source publishing software, including WordPress. One survey

contributor explained,

The tools were small as the websites are done in WordPress, and sometimes individual

versions are done on self-hosted WordPress. For students, there was never required texts,

nor software. They were encouraged to use software that they had available, and the site

offered free/open-source ones as suggestions. It was not about the tools.

Another survey contributor described a course "offered mainly in WordPress with a home-base in

Moodle. Both are open source and highly user configured as well as free of commercial interest." Like

many open-source tools, WordPress.org believes in "democratizing publishing and the freedoms that

come with open source." These freedoms include the ability to run the program for any purpose, to

make changes to the program and to redistribute the software and versions of the software in which you

have made changes (Wordpress, n.d.). WordPress currently powers approximately 30 percent of

websites, and its parent company Automattic Inc. has a valuation of $3 billion, which would be

classified as big in most social worlds.

Open, scale-centric business models. Within the social world of technology companies,

however, WordPress's valuation is dwarfed by the $8 trillion valuation of the largest five tech

companies (Amazon, Google, Apple, Facebook, and Microsoft) (Divine, 2021). Of these, the most

visible in the arena of open education are Google and Microsoft. Google's mission is "to organize the

world's information and make it universally accessible and useful" (Google, n.d.). Microsoft's "mission

is to empower every person and every organization on the planet to achieve more" (Microsoft, n.d.).

Their aspirations are massive. The open educators who participated in my research had mixed feelings

about the use of these large-scale tools. One survey contributor highlighted that "having so many

interactions on 'big' platforms led to some issues; Google Plus disappeared, and all of our posts with it."

In contrast, another contributor suggested that the use of these tools was more sustainable, "even if the

specific platforms used are a sometimes problematic." In the first focus group, Sara suggested that

educators should "just use the free stuff… and let them take your data. It doesn't matter." Her comments demonstrate a heavy dependence on big technological tools. They also suggest that among many open educators, the benefits that these big, corporatized tools offer with respect to their effectiveness and efficiencies outweigh the risks associated with their use.

In the other focus group, Charles shared a different perspective with respect to big technological tools. He said, "We're paying for a lot of the things that seem, so-called free, because we're paying for it with our attention and by allowing all this advertising to colonize our inner space, and our lives, and our brains and our souls. We're paying for it in different ways. The economy always demands payment." This latter opinion aligns with Franklin's (1999) perspective. She explained,

> Where prescriptive technologies are structured to perform social transactions, these
>
> transactions will be organized or reorganized according to the logic of technology, the
>
> logic of production. Thus, as more and more of daily life . . . is conducted via prescriptive
>
> technologies, the logic of technology begins to overpower and displace other types of
>
> social logic, such as the logic of compassion or logic of obligation. (p. 92)

Examples of open education being organized according to the logic of technology and production abound. Many participants in my study highlighted the use of big tools within open education.

Alternatives and trade-offs. Another big technology company with an important level of involvement in the open education arena is Twitter which, in its own words, serves "the public conversation" (Twitter, n.d.). Many open educators who participated in my research highlighted Twitter's importance within open education. In a map annotation, Charles noted that "it is unfortunate that Twitter is a private tool that collects data that is used for so many purposes inimical to education. The potential value of a tool of this scale is that it promotes porosity outside of the

course." In response, Jonah suggested that the open-source Twitter-like tool Mastodon[10] should be included in the analysis, pointing to an awareness of smaller, alternate tools that offer similar functionality but also have reduced potential to reach a wide audience. This annotated discussion suggests that open educators have a tacit awareness of the relationship between scale and the technological tools they use as well as of the many ways in which big technology companies wield power within open education.

Philanthropic foundations. The social world of global philanthropic organizations spends at least $1.5 trillion per year (Figure 11). Of these funds, it is estimated that one-third fund education-related projects. Open education projects receive a small fraction of that amount.

Figure 11

Philanthropic foundations as a social world
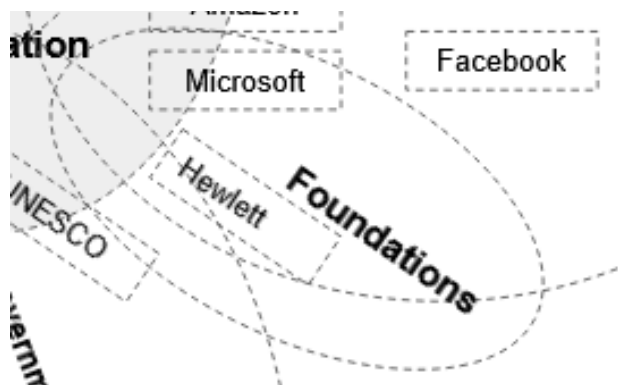
As I investigated the OER projects, like OpenStax, that were identified by my research participants, I found that many are supported by philanthropic organizations with ties to big technology companies. The Hewlett Foundation is currently the largest foundation funder of open education, contributing $14 million in the form of 37 grants in 2019. According to its website,

Nearly two decades of patient work have clearly demonstrated OER's role in

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[10] Mastodon is an open-source and decentralized Twitter alternative.

democratizing knowledge and empowering learners around the world. We have worked

diligently in that time to address pressing problems in education and have successfully

shown that OER can break into the mainstream. Openly licensed materials have never

been more widely used than they are today—from community libraries in Ethiopia to

middle schools in Detroit and universities around the world. But the field is at a turning

point.

The site goes on to identify its current priorities, with 75 percent of its funding earmarked to support

OEP and Open Policy research. This shift in its funding priorities coincides with an increasing interest

in OEP among the open educators who participated in my research. Despite this coincidence, the

participants in my research tended to avoid the topic of philanthropic foundations within open

education. In one focus group, however, Tracy did voice concerns about their intentions:

I have recently had some wicked conversations about [open research] directions that are

commodified and monetized. What is going to happen with the fruits of our labours? I

have huge concerns. I think about the Hewlett Foundation or the Microsoft mega-

foundations and if they are going to impact [open education] in a positive way, and that is

yet to be seen.

Although the other participants in her focus group nodded while she spoke, they did not contribute

additional thoughts. Like in Chapter 3, where it was difficult to link the scarcity of critical research

within open education to a dependence on funding and tools, it was difficult here to link the reluctance

among my participants to discuss their concerns about the field's philanthropic partners to the funding

those same partners provide. At the same time, it is also difficult to assume that there is no connection.

Lyotard (1984) called this dynamic the "games of scientific language." He explained that because

wealthy individuals, corporations and foundations can afford to fund research, "whoever is wealthiest

has the best chance of being right. An equation between wealth, efficiency, and trust is thus established"

(p. 45). The silences that surrounded the topic of these philanthropic foundations among my research

participants suggest that this dynamic may be relevant within the field of open education.

Governments and governmental organizations. Governments and governmental organizations

represent another social world (Figure 12). At the global level, UNESCO supports large-scale OER

projects directly and by leading inter-governmental discussions related to capacity building, policy,

sustainability, quality, and accessibility in cooperation with the Hewlett Foundation. In November 2019,

the UNESCO General Conference adopted an OER recommendation (UNESCO, 2019).

Figure 12

Governments and governmental organizations as a social world

Governments around the world are now in the process of developing their own policies and funding

approaches for open education.[11] In a focus group, Kathleen discussed how government policy and

support can affect adoption across regions. She noted, "When I look at Canada, it is really the continued

investment from the provincial governments that has made the difference. BC and Ontario are far ahead

of any other province because they have had continued commitments from their provincial governments

to support open infrastructure." Although open educators did identify the importance of governmental

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[11] The OER Policy registry lists more than 500 OER policies written at the global, national, institutional levels.

support in terms of advancing their work, none of the open educators involved in my work mentioned

the connections between these supports and the Hewlett funded open policy work. Their silences

suggest that this is an area of inquiry that requires further consideration.

   Educational institutions and administrators. Beyond the governmental level, educational

administrators set direction for their institutions in all areas, including open education (Figure 13).

Figure 13

Educational institutions and administrators as a social world
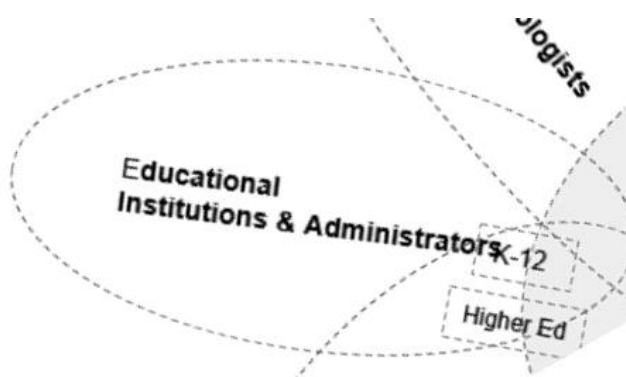
Although the purpose of my focus groups was to discuss the implications and mechanisms of scale

within open education, my research participants instead often raised place-based examples of scale in

education. Tess, for example, noted:

   There is an interest in maximizing student enrollment, so you wind up with this notion of

   scale that mirrors a kind of capitalist "bang for your buck." It's squarely about the

   economics of education. An institution tries to get the most students enrolled in a particular

   course without spending much time thinking about the impact on teaching and learning. My

   worry is that the impact on education is secondary to the conversation about costs and the

   economics of education.

Tess's comment suggests that the patterns of decision-making taking place within post-secondary

institutions look remarkably like those within private corporations where production models of scale are

highly valued as described in the above sections.

At the same time, the open educators who participated in my research consistently rejected these scale-based approaches to education. Several survey contributors identified the barriers created by institutional grading requirements. One survey participant noted that "sometimes grading impinges on the relationships that form and the progress that students have made." These comments were echoed by another survey participant who highlighted the "overuse of grading standards and rubrics. It turns into a vast spider web of assessment tools." For these participants, educational institutions appear to prescribe rules and processes over which they do not have control.

Within the focus groups, research participants further explored the connections between their teaching practices and the institutions for which they worked. Jonah, Tess, and Sara spoke for some time about institutional constraints. Jonah noted, "There are all kinds of arcane rules at the institution. I think there are a lot of those constraints." Tess offered a concrete example:

[In my class] we started to talk about who made the decision about the left-handed desks. The lefties in the room either choose to sit anywhere and inconvenience themselves for the right to choose to sit anywhere, or they have to seek out a left-handed desk. Then you can ask the upstream question: Who is making the decision about how many left-handed chairs and desks are going to be in this room? Somebody in procurement who is doing it based on averages. There are a million assumptions before you even walk into the room that have been made and we don't ask why. I think part of why we don't ask why is efficiency. Again, one of those economic words.

Sara offered a similar place-based metaphor. She noted,

One of the issues is that the people making the decisions don't understand pedagogy, so they make decisions on what they think pedagogy is… We have a huge problem in Egypt

in K-12 public schools. You can have huge numbers of like 70 or 200 kids in a room. The

way they try to stop that from happening is by making a maximum size for the room and a

maximum distance from the board, which assumes lecturing… So, by trying to make

standards that fit the average of what they think pedagogy is, they restrict creativity and

flexibility.

Sara expressed frustration that by trying to set standards based on a lecture-based approach to teaching,

bureaucratic decision-makers constrain the pedagogical creativity and flexibility of those teaching. For

many open educators, the interest in digital spaces appears to emerge, at least in part, from a desire to

escape these types of institutionalized constraints. As a result, the open educators who participated in

my research appear to engage in open education as a way of escaping institutional bureaucracy.

Teachers, librarians, and faculty /educational technologists. The final social worlds that I

will explore here include teachers, libraries, and faculty members/ educational technologists (Figure 14).

Figure 14

Teachers, librarians, and faculty/ educational technologists as social worlds
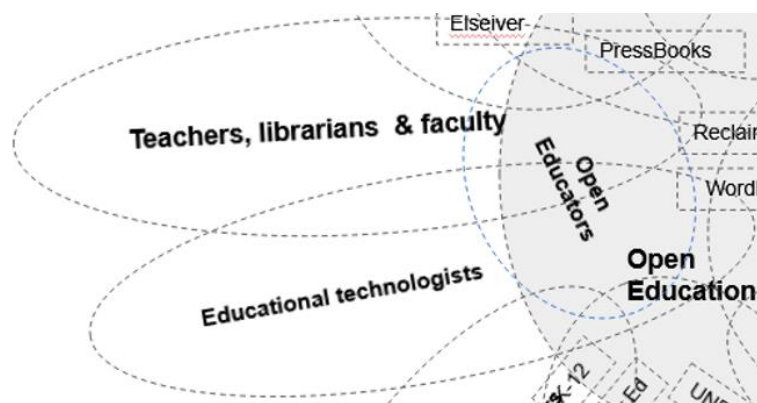
Although each of these groups is distinct and supported by specific organizations, including faculty

associations and teachers' unions, for the purposes of my analysis, I have combined them here into two

social worlds: teachers, librarians & faculty and educational technologists. What is of primary

importance for my analysis is that open educators span these various groups, but do not comprise the

totality of any of them. As a result, there is a significant population within these social worlds that do not understand and/or do not support open education. One survey contributor noted that because open education tends to sit outside the activities formally valued within these social worlds, "it is hobbled in terms of sustainability and long-term focus, as well as broader buy-in from people who simply can't make headspace without some form of recompense." This comment suggests that some open educators feel frustration as it relates to mobilizing larger groups of teachers, librarians, faculty, and educational technologists.

Open Education at the Nexus of Powerful Social Worlds

Sanya et al. (2018) argued, "explicitly and implicitly, educational systems and institutions imbue value into specific histories, ideals, lives, systems, ideologies, and futures. In these ways citizenship is defined in educative practices" (p. 5). As seen in the social worlds/arena map described throughout this chapter, open education sits at the nexus of many big and powerful social worlds, most of which have significant interest in maximizing gains via prescriptive methods, including increased efficiency and divided labour. Controlling open education is an effective way to both accumulate and exert more control over broader educational systems and populations. Education matters and who controls education matters (Elias, 2019). As I noted at the beginning of this chapter, the purpose of the social worlds/arena map is to better understand the current broader design within which open education is situated. By exploring these larger patterns, I have mapped the pervasiveness of the prescriptive patterning within social worlds and its apparent prevalence within the arena of open education. Most technology companies, EdTech, textbook publishers, governments, and institutions replicate prescriptive approaches to their technological practices; many of my research participants described feel caught within such bureaucratic patterns.

Reviewing the Social Worlds/Arena Map of Open Education, it is not difficult to understand why open educators might see efficiency and prescriptive technologies as the only viable approach to

scale and why they might, consequently, seek to avoid the topic altogether. The predominance of these massive, prescriptive approaches may lead some open educators to wonder if there is, in fact, a viable alternative. The open educators who participated in my research tended to recognize the harms of dominant, prescriptive patterning within traditional institutions. They tended to see open educational initiatives as a positive alternative. At the same time, they often demonstrated ambivalence with respect to their use of big technological tools and their prescriptive tendencies. Although some of my participants expressed a preference for smaller and open-source tools, the overwhelming effectiveness and efficiency associated with these big, corporate tools make them easy to use and difficult to avoid. As a result, these tools are often deeply embedded within the practices of open educators. In her book *Teaching Machines,* Audrey Watters (2021) explained,

> It is impossible to tell the story of teaching machines without telling the story of the
>
> *business* of educational technology, without telling the story of corporations shaping what
>
> educational technology looks like, how it functions and whose needs it serves. (p. 80)

Using my Social Worlds/Arena Map of Open Education, this chapter has sought to tell the story of the business of open education, focusing on how corporations, institutions, and governments shape what open education looks like, how it functions and whose needs it serves. It is important to note, however, that social worlds and arenas are not fixed, but fluid entities that are constantly changing in response to interactions with one another; change is possible, as is the reopening of that which seems closed (Haraway, 2003). In the next chapter, I turn my attention to a relational map developed in collaboration with a small group of open educators that centers their motivations and constraints and demonstrates both awareness of powerful forces outside of their control *and* a desire to activate change.

Chapter 6: Relational Mapping – Motivations and Challenges Among Open Educators[12]

In the previous chapter, I explored the external prescriptive forces being exerted on open education using a social worlds/arena map. In this chapter, I briefly introduce the social world of open educators. I then introduce the relational map developed in collaboration with my research participants and use it to explore their nuanced and complicated relationships with scale, drawing attention to the tensions between "the big picture" as presented in the previous chapter and the interests of open educators.

Open Educators as a Distinct Social World

As discussed in Chapter 2, the term open education lacks a consistent definition (Stracke et al., 2019). The responses of my research participants reflected this lack of consensus. One survey participant expressed frustration with expansive definition of open education as described in Chapter 4. She said,

> I am having trouble not feeling frustrated with the *fuzzy* definition of open education.
> Openness in education has a notable and detailed history - e.g., the OPEN universities of
> the world (e.g., the Open University of Hong Kong, the UK, Athabasca University.)
> Openness in education is very closely tied to the commodification of knowledge through
> copyright - yet your survey doesn't seem to reflect this foundational aspect.

Other research participants offered different thoughts. In a focus group, Kathleen said, "What really jumped out at me was how many different thoughts people have about open education and their different ways of looking at it." Survey participants shared a similarly wide variety of approaches to open education, highlighting a series of projects including "Z-Cred" textbook cost-free degrees, OpenStax

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[12] A version of this chapter has been published as Elias, T. (2021). "A situation of open education": Using collaborative relational mapping to explore motivations and constraint among open educators. *Journal of Interactive Media in Education*

textbook development projects, national OER initiatives, open infrastructure projects, MOOCs, and the development of open educational policies. They also offered examples that included class-level initiatives that engaged with resources and communities beyond the classroom, public scholarship and open sharing at the grassroots community and individual levels. According to many of the research participants, therefore, a situation of open education involves not only OER, MOOCs, OEP and Open Textbooks, but also the ongoing work of practitioners seeking to transform a wide variety of educational practices in ways that align with concepts and definitions presented at the end of Chapter 2 (Cronin, 2017; Havemann, 2016; Tur et al., 2020). One survey contributor explained,

> For me, open education is the catchall space for a broad network of people generally aligned with destabilizing some of the closed power structures of higher education and academic publishing. Always in flawed ways, not an ideal, but nonetheless a big loose coalition of the more transformational people and concepts I have access to.

Similarly, in a focus group, Charles noted, "One of the issues that we became more aware of over time was that we were all people with really good intentions and community minded; otherwise, we wouldn't bother with open education." I suggest that within the arena of open education, there is a distinct social world of open educators who "share perspectives that form the basis for both individual and collective identities" (Clarke et al., 2018, p. 148). I further suggest that this social world cuts across a series of other social worlds, including teachers, librarians, educational technologists, and administrators (Figure 15). It is this expansive social world of open educators that I refer to throughout remainder of my analysis.

Figure 15

Open educators as a social world
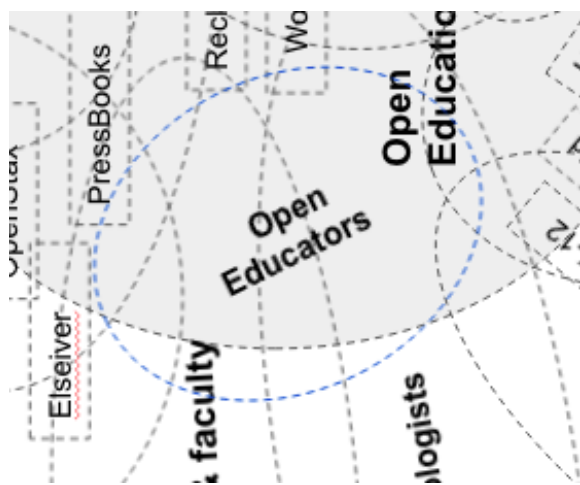
The remainder of this chapter is dedicated to a situation of open education as described within a relational map developed by research participants who self-identified as members of this distinct social world. In this map, they simultaneously avoided discussing scale directly *and* exposed a tacit desire to harness different approaches to scale within the field.

**A Collaborative Relational Map of Scale in Open Education**

As the name implies, a relational map identifies the relationships between the elements of a situation. Its purpose is to help the researcher "decide which stories about the situation – which relations—to pursue" (Clarke et al., 2018, p. 140). Although situational analysis describes this activity as the independent work of the researcher, I engaged my research participants in this mapping activity. As described in Chapter 4, I used the responses from an anonymous, qualitative online survey to populate a document with open codes in the form of a messy map. I then invited a group of six open educators to identify and annotate relationships between those words to create a relational map. These participants connected 73 codes and added 45 annotations that provided additional context and insight into these relationships. I have retained all the relationships identified but removed the annotations from this view of this map. I do, however, refer to these annotations throughout this chapter and elsewhere in

my dissertation. As described in Chapter 4, I also draw on theoretical codes associated with prescriptive

and holistic technologies throughout this chapter.

This chapter explores a complex, dynamic and incomplete situation of open education (Figure

16)[13] as selectively coded by a small group of open educators.

Figure 16

Collaborative relational map of scale in open education
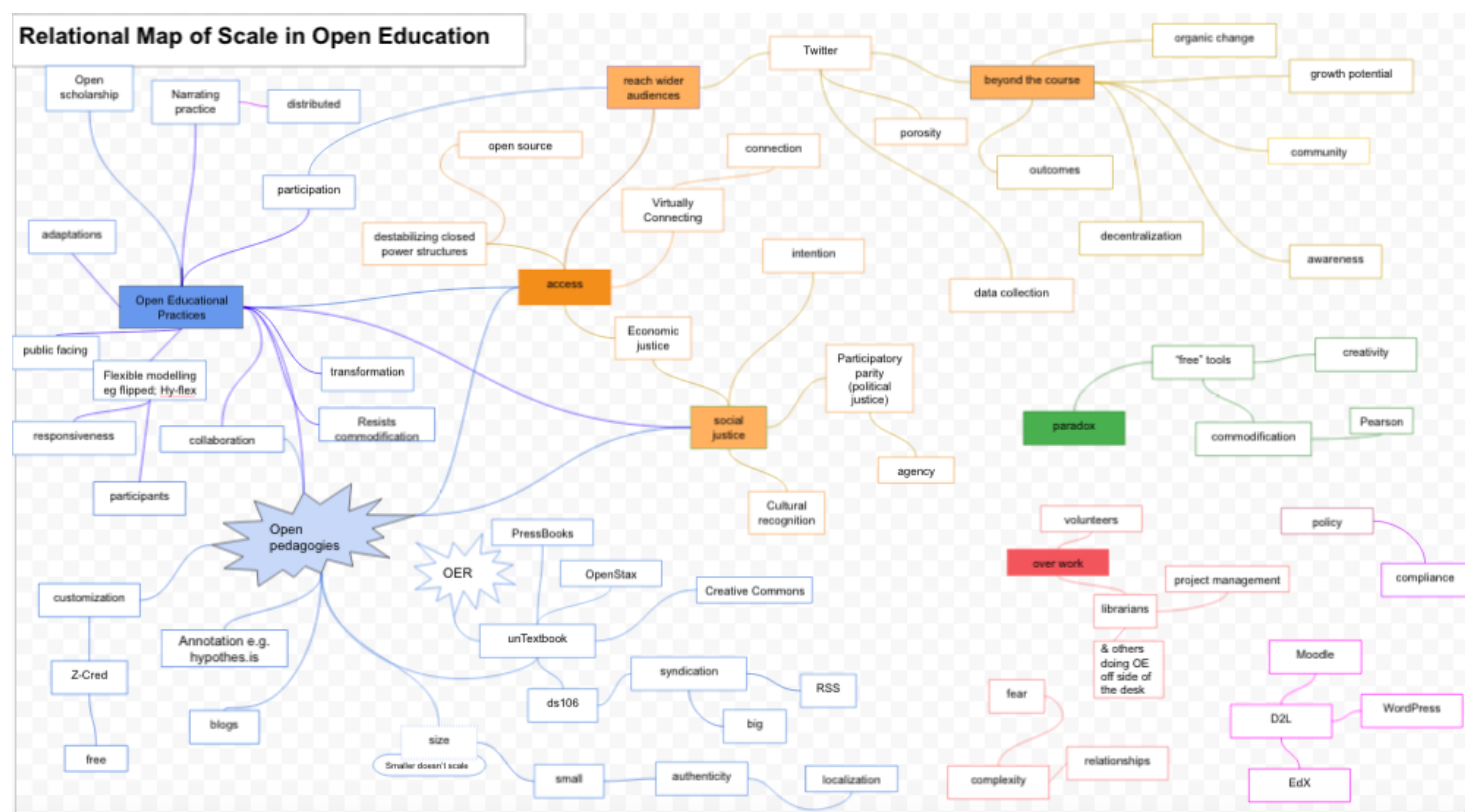

Modalities of Open Education

The open educators who participated in my research referenced involvement with a series of open

education modalities, including MOOCs, OER, OEP and open pedagogies. Within the relational map,

OEP and open pedagogies emerged as central concepts that were connected, both directly and indirectly,

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[13] I have included a larger version of this map in the appendix.

to most of the map (Figure 17).

Figure 17

*Section of the relational map dedicated to OEP*
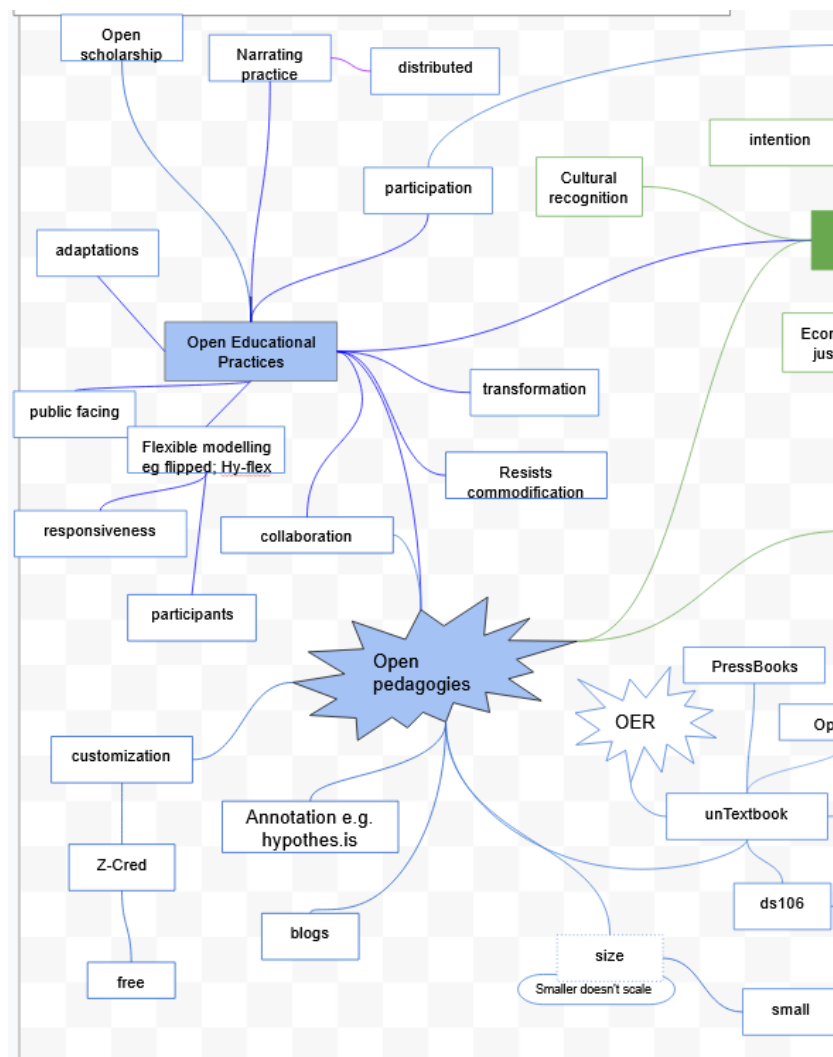
I have treated open pedagogies as a subset of OEP because, as Sara noted in her annotations, "OEP includes open pedagogies." Interestingly, the map annotators made only one relational connection between the term OER that did not connect directly to either OEP or open pedagogies but, instead, to "unTextbook." Another surprise was that none of the annotators identified relationships to the code MOOC. As a result, I removed the code from the relational map as part of the cleaning process described in Chapter 4. This apparent shifting focus away from OER and MOOCs and towards OEP and

open pedagogy aligns with the literature and foundation funding priorities for open education described in Chapters 2 and 3.

      Big and little open education. It was interesting that in a mapping activity focused on the implications of scale within open education, the words "big" and "small" garnered little attention among the annotators. Both terms were, however, tangentially related to the concepts of OEP and open pedagogies, suggesting that OEP can be applied in both big and small ways (Figure 18).

Figure 18

Concepts of big and small within the relational map
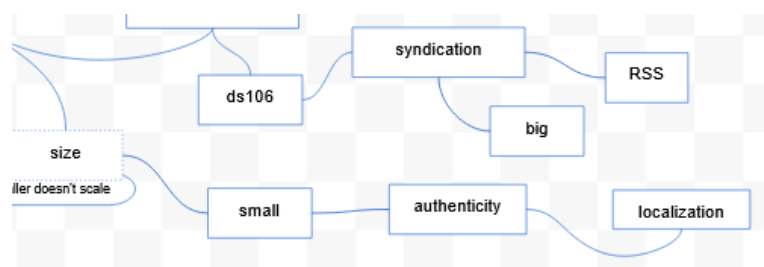
The code "small" was connected to concepts of authenticity and localization; one annotator added "smaller doesn't scale." The annotators did not, however, connect the word big to ideas of industrial production. Instead, "big" was connected to syndication and RSS, a syndication technology used to keep track of many different websites using an aggregator. Referring to a digital storytelling course entitled ds106 that was first run at the University of Mary Washington in 2010,[14] Jonah noted that "syndication, in terms of the idea of a connected course, was key for ds106 and others that followed." What Jonah described as big, was in fact an approach to scale achieved by connecting many small, localized pieces loosely joined (Weinberger, 2003). In a focus group, Charles, described this localized approach to scale in more detail:

      We know there is a really interesting phenomenon, which is that localization actually does

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[14] https://ds106.us/about/

scale, which is entirely counterintuitive. This idea that one universal course or strategy

scales better than localization is too limiting. There's a whole skillset around localization

on the part of the learner to take this particular problem set or theory or practice and say,

"Okay, now I'm going to take this and apply it to my own context." … So, you can

replicate that 1000 times, and everybody's doing something different.

Similarly, in an annotation connected the concept of OEP, Sara noted that open narrating practices

"*help* with scale because it makes it possible for others to replicate a small intervention in other

pockets." Other concepts connected to OEP and open pedagogies highlighted a similar interest in

localization, including adaptations, collaboration, and customization. These open educators, therefore,

did not tend to associate "big" with increased standardization but, instead with increased variation and

localization in ways that suggest a tacit awareness of a non-production model of scale.

Purpose of Open Education

Where many of the social worlds described in the previous chapter were largely motivated to

participate within the arena of open education for reasons of financial gain and efficiency, these did not

appear to be motivating factors for any of my research participants. In fact, within the responses to the

anonymous online survey, there was not a single reference to efficiency. As a result, that term was not

included in the relational mapping activity. Instead, the open educators who participated in my research

appeared to be motivated by the desire to increase access to education. Ideas related to access also

figured prominently in the relational map (Figure 19) and were consistently referenced in survey

responses and focus groups.

Figure 19

*Section of the relational map related to access*
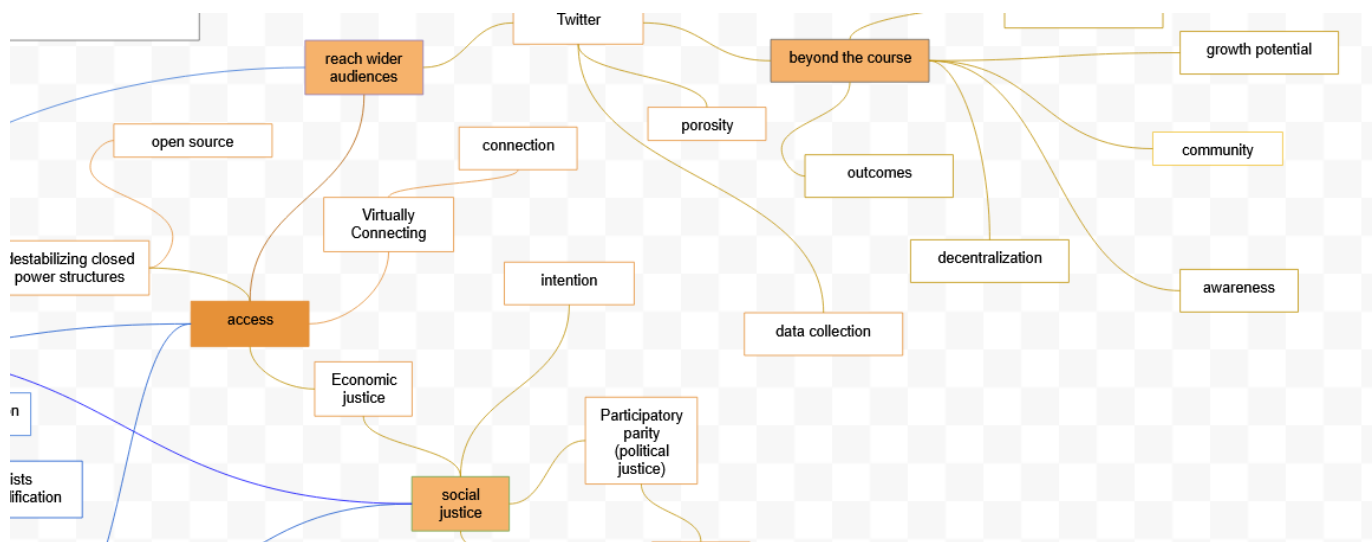
For example, in a focus group, Charles highlighted the pre-internet historical connections to learning in flexible ways in terms of time, structure and geographical location. Along the same lines, a survey contributor noted open education's "potential for more equitable, immediate access to scholarly publications for all scholars around the world." On what is the opposite side of the access coin, other survey contributors were motivated to use OER to both access resources not available in their university databases and to access good-quality, free resources during the pandemic, when library materials were not accessible to their students. In a focus group, Tess suggested that the "availability of content matters, and who can have access to that matters, and then what learning happens after matters. And those things aren't quantifiable." Access, therefore, appears to be a central motivator among open educators. The participants in my research further related the concept of access to enacting social justice, moving beyond the course and reaching wider audiences.

Enacting social justice. Among my research participants, notions of access flowed directly into ideas of social justice (Figure 20). Within the collaborative relational map, Sara highlighted that "social justice includes an element of economic justice, which often manifests as access."

Figure 20

Section of the relational map related to social justice
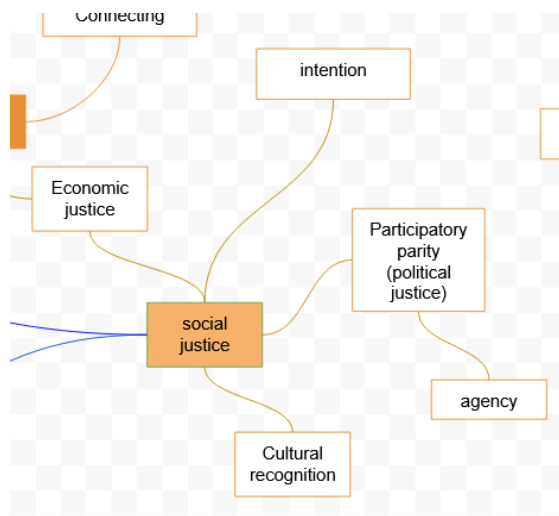
She further explained these connections, noting that "using no or lower cost learning materials can be transformative for students on an individual financial level." Beyond economic justice, participants further highlighted the importance of social and political justice. For example, within the relational map, Sara also added the concept of participatory parity, a concept Sara, Tess, and Jonah discussed in their focus group. They explained their desire to increase educational opportunities among those who are currently excluded for a variety of social, economic, and political reasons.

Within the relational map, social justice was also directly connected to intention. Sara annotated this connection stating that "openness in itself, or any of the isolated tools or technologies associated with it, doesn't have the agency to address social justice at any scale." Within one of the focus groups, Charles, noticed this annotation, saying:

When you explore a new area of openness, there are so many different dimensions to it. Each one of those scales differently, so I think the word scale is actually really complex. We get into trouble when we think linearly, or even logarithmically, about scale and then try to apply that to the heart of openness, which is about care. It's about justice. It's about

engagement and empowerment, all of the things that we know education is about. I don't

think we understand yet how that scales, or whether scale is the right word for that.

This comment suggests that there he had significant ambivalence with respect to the concept of scale

and a tacit awareness, but not a clear understanding, of different mechanisms through which it may

be achieved within open education.

Moving beyond the course. Another source of motivation identified through the collaborative

mapping activity was the idea of moving beyond the course (Figure 21).

Figure 21

Section of the relational map related to beyond the course
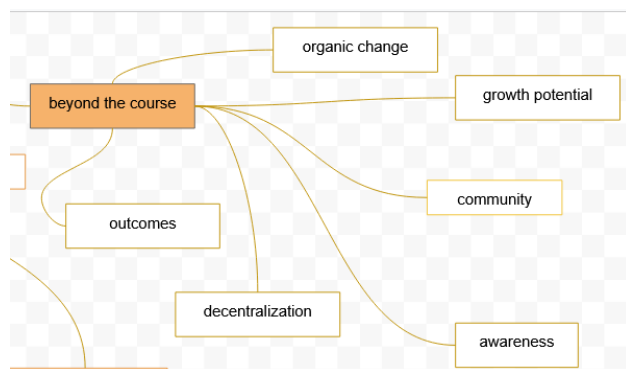
Within the relational map, my research participants connected this concept to a series of other words

including community, decentralization, organic change, and growth potential, but only Charles left an

annotation. He wrote, "the idea of 'beyond the course' is a core aspect of my pedagogical interests. I see

the course not necessarily as a thing in itself, but as a resource to prompt the learner to thinking in a

deepening, caring, and growing manner about not just content but what it connects to." Similar concepts

emerged in the focus groups. Tess explained that "if you have an authentic audience, it doesn't really

matter that the teacher isn't reading [a student's assignment]." Jonah responded suggesting that working

in open spaces can extend the reach and shift the responsibility for sharing, responding, and learning for

both students and teachers. Similar ideas emerged among survey contributors, one of whom explained,

"Open tools such as WordPress enable a more free-form way of putting students' thinking out in public and gives faculty a feel for their history beyond the individual course." Another survey contributor offered an example from the ds106 digital storytelling course:

> The thing about ds106 is that the offerings are usually centered on a small (class size) group being taught as a for-credit course, and the participation is opened, on top of that, to the open community. The same experience is not expected for all: open participants choose their level of participation. Even these numbers are not huge, but the interaction with the registered students nearly always has positive impact.

He went on to explain: "I'd like to think of the experience as feeling a bit of smallness in a big space. Having the mix of interactions with people beyond the course serves to make it less of a thing that sits in isolation from the world." Echoing these ideas, another survey respondent suggested that open courses "create opportunities to be more creative and think about a larger audience than the instructor." In these cases, moving beyond the course appears to be less about scaling in terms of the number of interactions, and more about creating connection beyond the scope of the course itself. These responses suggest that open educators are interested in finding ways to expand opportunities to generate new connections and develop new relationships. Such interests appear to be associated with opening opportunities that are generative and reciprocal. Moreover, the annotated connections between moving beyond the course and the codes organic change and growth potential suggest that the concept of moving beyond the course may be closely aligned with holistic technologies.

Reaching wider audiences. Within the relational map, reaching wider audiences was directly connected to participation and the use of Twitter (Figure 22). In a map annotation, Charles highlighted that "Twitter reaches wider audiences than blogging."

Figure 22

Section of the relational map related to reaching wider audiences
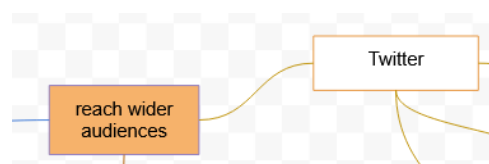
Within the survey and the focus groups, my research participants expanded on these connections, suggesting that reaching wider audiences involves extending the reach of both content and people. In terms of enabling content to reach wider audiences, in one focus group Tracy expressed concerns related not only to copyright-restricted content, but also the many resources "just sitting in these spaces that we say are open, but that nobody can find." She highlighted the importance of improving "findability" and, thus, access to those resources. These desires to increase the findability of educational resources seem better aligned with the Creative Commons shift towards "better" sharing than it is with the production-aligned approaches to increasing educational opportunities.

Focus group participants and survey contributors highlighted the importance of reaching broader rather than larger audiences within the context of personal and professional development. Describing a MOOC geared towards open educators, one survey contributor highlighted that "many people formed deep and lasting connections with each other through their smaller conversations on social media or blogs. This group still has ties to each other today." Another survey contributor commented that "the bigness of being spread over time means that I improve my work, and I also have a chance to grow my network of 'online awareness.'" Jonah further emphasized that the impact from online networking cannot be quantified by counting the number of participants. He contrasted his experiences running both big lecture-style keynotes with over 500 participants to smaller workshops, sometimes with only 10 participants. He noted that these smaller sessions allowed for some "very intense experiences" among geographically dispersed participants that would not otherwise have been possible. He then posed the

question, "Do we know what people carry away from that?" Sara tied this conversation back to the concept of scale by asking, "Is the question, what can you scale without losing [something of value]?" Sara emphasized that open educators seek to develop an approach to scale that does not reduce learner and educator agency.

One approach to increasing access that was mentioned in both the relational map and the focus groups was Virtually Connecting, an organization that enables virtual participation at academic conferences (Bali et al., 2015). In a map annotation, Charles described Virtually Connecting as "community-based and peer-operated, which gives it credibility and trust for access and connection to larger events and conferences that many were unable to travel to (pre-Covid). Scaling by community for community." In a focus group, Tracy echoed these ideas explaining, "That's the power of open. Even if you can't be in a particular context in that moment, you can still have some of the experience." She went on to suggest that Virtually Connecting is more interested in creating connections, something she described as "scaling up geographies—it is scaling in terms of distance but not in terms of the economics of how many student enrollments I can get per instructor." These references to reaching wider audiences highlight an apparent underlying desire among open educators to scale up, not in prescriptive ways that increase efficiency, but instead in ways more aligned with holistic growth. At the same time, however, the direct connection between "reaching wider audiences" and "Twitter" demonstrates how the tools used to reach wider audiences often complicate these dynamics. Open educators appear to be seeking holistic outcomes, including organic change and growth while using tools aligned with prescriptive technologies, a contradiction that I will explore more in the next chapter.

Constraints Within Open Education

The relational map highlighted not only the features and purposes of open education, but also two key constraints: overwork and repeating patterns.

Overwork. Overwork is an issue to which the open educators who participated in my

research continued to return (Figure 23).

Figure 23

Subsection of the relational map related to overwork
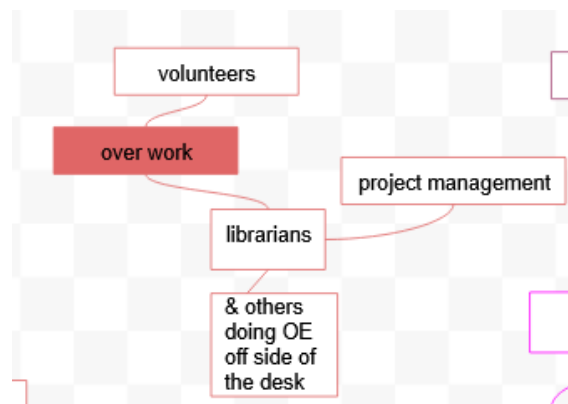
In the map annotations, Kathleen noted that "many librarians that work in the broad area of 'open' are doing this work off the sides of their desks... For many practitioners, this is a struggle." This comment prompted Sara to write, "It makes me think about the amount of affective labour involved in unfunded and non-institutional open practices." In fact, almost every research participant referenced unpaid open education-related work in one way or another.

Many referenced projects run by volunteers and/or projects not able to attract funding. Some respondents identified this lack of funding as a positive. One survey respondent wrote, "I like having no funding. This frees me and the participants from expectations and control by others." Another respondent shared, "related to funding, the free control removes any pressure to deliver or even to complete the course." Other participants, however, spoke of overwork and underfunding as serious constraints to their work. In her focus group, Tess noted:

> There is a lot of invisible labour that goes on in open education, from the software systems that support open to all of the work that goes on behind the scenes to create an open textbook for a class. It is a million times more work than buying one, and I don't think that that labour is often recognized or rewarded.

As Tess noted, choosing to use a mass-produced textbook is easy, a reminder that where ease and efficiency are the goal, large-scale prescriptive approaches are appealing. Engaging in small-scale open education initiatives requires more effort. Choosing how to proceed, therefore, involves a scale-related choice with associated costs; neither is free. Where the cost of mass-produced commercial textbooks is financial and borne by students, the costs of more holistic open education initiatives is often measured in the unpaid time of open educators.

Charles shared his insight into approaches to labour during his early involvement in open education:

I did a massive amount of extra work in our open initiatives, and several of my colleagues too. So much of it was done at night and on weekends. I saw the librarians, instructional designers, graphic arts and media people all put this effort in because they really believed in it, and they really wanted to do it. Everybody that was involved with this project put in so much of their own time, but that's not sustainable. Over time, you start to realize now that's a really naive concept. If you want to scale, if we want to use that word, you might find some efficiencies, but in the end, the labour has to be undertaken.

Charles's comments highlight the level of commitment many open educators have to the transformation of educational systems in ways that would benefit students. However, they also acknowledge a level of naiveté within the open education movement as it relates to the mechanisms and prevailing prescriptive approaches to scale within the social worlds active within the arena of open education.

Charles went on to suggest that "you have to relate labour to sustainability, and for sustainable open education to grow, it has to become part of our work processes." Within their focus group, Charles, Tracy, and Kathleen discussed at length the need to build recognition for open education efforts into workload, tenure, and promotion guidelines as well as their frustration with respect to the speed of

structural changes and open education labour recognition within higher education. Kathleen explained, "I've been advocating for openness for over 15 years. I haven't seen much change in terms of institutional structures that incentivize or reward openness. I find that really frustrating." She then shared her strategy for navigating these realities:

> The way I stop from feeling really depressed is to think of it as a collective action problem. These changes are things that are going to take collective action on the part of all people involved. I try to focus on things that are within my control at my own institution. If I can contribute to rewriting tenure and promotion guidelines at my institution, then sign me up! The small things, like trying to provide recognition to people who I see engaged in this type of work, that's what motivates me.

Kathleen's comments, and the longer conversation within her focus group, point to a growing awareness of the need to focus on labour patterns and engage in work at a local level as a means of supporting the sustainable and organic growth of open education.

Meanwhile, the persistent references to overwork and unpaid work suggest another reason that open educators are reluctant to discuss scale. They tend to recognize the scope of the work required given existing resources. Unlike prescriptive technologies that seek to scale as a means of maximizing financial gain, these open educators' interest in scale appears to emerge from a desire for more hands to help transform education through openness.

Repeating patterns. At the same time, my research participants struggled to describe how they hoped to achieve transformations through open education; none of the scale-related words were connected directly to either OEP or open pedagogies. Instead, OEP was directly connected to words associated with earlier open education initiatives at specific points in time, including "resists commodification," "flexible," "collaboration" and "transformation" (Figure 24).

Figure 24

Subsection of the relational map related to OEP
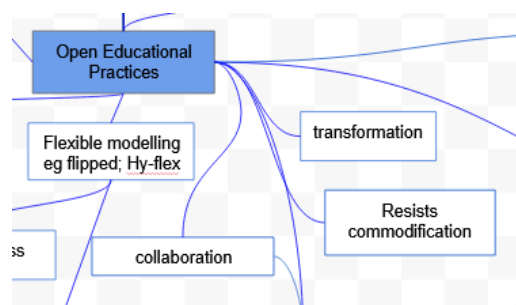
In a focus group, Kathleen noted how historical patterns have played out within the context of open

initiatives:

> Something that worries me as a librarian is seeing the same patterns repeat themselves in different
>
> contexts. I mentioned that I come from an open access background. Twenty years ago, was when
>
> open access started gaining a lot of momentum. We began to see the commercial publishers
>
> capitalizing on it and subverting the open access model for their own profit. That same thing is
>
> now happening with commercial textbook publishers. It's rinse, wash, repeat. It's kind of
>
> depressing and unfortunate. It dismays me to see this repeating, the same cycles again and again. I
>
> don't have a good reason about why that's happening, but I do hold librarians, as a group,
>
> somewhat accountable for that.

Although most open educators, might argue that the focus on practices and pedagogies makes OEP

different from their predecessors, ignoring the repeating historical patterns of big and little open

education likely increases the risk that we will repeat rather than change old patterns.

Complicating Notions of Scale

I began my research using a conceptual framework of big and little open education. As discussed

in Chapter 2, this simple framework served as a helpful classification tool for organizing scale-related

ideas within my literature review and guided the development of my research methods. At the same

time, it was intended to serve as a binary to trouble and complicate throughout my research. As seen in the relational map presented in this chapter, the open educators who participated in my research consistently complicated ideas of scale, regularly rejecting classifications of big and little. In fact, they resisted talking about scale at all. Instead, they tended to focus on the transformational possibilities of their efforts. One survey participant described an infrastructure project that was built "from the ground up, so it is sort of a paradox in terms of big/small. Maybe it's a small project with big potential?" The idea of small-scale projects with big potential was a common theme among my research participants. This perspective points to a desire/hope/expectation among open educators that their work will be transformational over time.

At the same time, all the open educators who participated in my research highlighted the importance of small-scale, localized actions in some way. Tracy, for example, highlighted the importance of taking time to engage with faculty one-on-one or in small group conversations. "Is it scalable? Probably not. But in terms of collective action, globally, we've got this opportunity where we can potentially make a shift, a change. Like with climate change, change isn't going to happen without a pile of conversation." A similar conversation emerged in the other focus group. Jonah said,

> If you talk to anybody about a memorable school learning experience, it's going to focus
>
> on a person, someone who made a difference, that caring outreach. Those are the things
>
> that stand out, that people leave with, and that's a different kind of scaling. Lectures scale
>
> by replication and multiplication. You can do it over and over again through technological
>
> means, but where do we have the ability to do what we're doing in this focus group, in
>
> terms of having an unstructured conversation? And how can that work at scale? This is
>
> great with four people. When you get to 30 you need to have a different strategy and then
>
> you get to 300, and things fall apart. The whole struggle is *How do we create more*

possibility for this?

Many participants echoed these sentiments with respect to the desire/need to scale up their transformational efforts. In the process, they demonstrated a simultaneous reluctance to explicitly discuss scale *and* a tacit awareness of the need for a different approach to scale. Tracy explained,

> The more I think about this [idea of] scale and the whole concept of open education, it really is two sides of the same coin. There is the organizational, and that's the scaling up, the big picture. Then there's the individual level that involves scaling down to the level of personal connections. I don't think there's a good or a bad for either. I think [open education] needs both.

Kathleen expanded on these ideas:

> My first thought about scale was that scale is really important. On the other hand, I'm thrilled to start on a small scale. I feel like you can make a lot of progress working with small groups of enthusiastic people and I think Charles's point about scaling up—"Is it a positive or a negative?"—is a very interesting question, especially right now, watching what's going on in the context of the pandemic and the flip to online teaching. There's going to be a push to keep large-scale online classes going into the future because they're cheaper, and it's got me thinking about scale in a different way.

These comments suggest that where the broader social worlds consistently exert prescriptive pressures intent on maximizing financial gain, the open educators who participated in my research regularly rejected these ideas and, instead, focused on increasing access, extending the reach of their effort, and transforming educational practices and learning conditions in ways more aligned with holistic growth.

Open Educators Seeking but Struggling to Articulate Alternatives

As I noted at the beginning of this chapter, the purpose of my collaborative relational mapping

activity was to directly involve my research participants in deciding which topics I ought to focus on in my positional maps. By following the connections and relationships mapped by my research participants, I have identified their interest in holistic approaches to growth and escaping prescriptive bureaucratic and technological patterns.

Reviewing the Relational Map of Open Education, the ambivalence of and apparent contradicting perspectives among open educators with respect to scale begin to make sense. The open educators who participated in my research rejected educational approaches that sought to increase efficiency, standardization, and compliance. Many of them have had positive experiences with small-scale open education initiatives, and many expressed an opportunity/desire/need to achieve transformation through extending those types of opportunities to others in non-prescriptive ways; some of them fear repeating past patterns. As a result, these open educators consistently demonstrated a tacit awareness that alternate models of scale exist within open education but struggled to clearly articulate them. In the next chapter, I use two positional maps to untangle these scale-related complexities.

Chapter 7: Positional Maps - Growth and Production as Models of Scale

In the previous two chapters, I used a social worlds/arena map and relational map to present two different perspectives of the purpose, implications, and mechanisms of scale within open education. In this chapter, I employ a third mapping technique, positional mapping, to attempt to reconcile the apparent contradictions uncovered in the previous chapters. Within situational analysis, positional maps are intended to support a specific and explicitly post-structural type of analytic work, that involves laying out all the major positions taken on an issue (Clarke et al., 2018). I begin this chapter by describing the relevance of positional maps within situational analysis. I then use two positional maps to further analyse the complicated scale-related positions associated with open education in alignment with my theoretical codes related to prescriptive and holistic technologies. Finally, using a series of positional pairs, I highlight how nuanced positional shifts at various scales can lead to dramatically different outcomes as open education initiatives scale up over time. These positional pairs further help to explain why it is easy for open education and open educators to fall into the prevailing prescriptive, production-aligned approaches as initiatives move from little to big over time.

Role of Positional Maps within Situational Analysis

According to Clarke et al. (2018), positional maps are at the core of "making situational analysis a fully post-structural approach to qualitative inquiry" (p. 165). These maps lay out all positions taken in relation to a topic of concern within a situation. Clarke et al. (2018) further explained,

> *The goal is to represent all the major positions articulated in the materials on their own terms.* These are *not* the terms of the researcher, but rather the researcher's best effort to grasp and represent the positions taken in the discourses *by those who produced those materials.* Thus positional maps of discourses are based in a more insistently democratic theory of representation...This is a post-structural move. (p. 166)

Therefore, the purpose of these maps is to represent the richness and heterogeneity of ideas without linking them to specific actors or groups. In this way, positional maps seek to move beyond the knowing subject (Foucault, 1973).

To develop positional maps, the researcher defines an issue of debate within a situation of inquiry. Next, they define two major dimensions that serve as the x-axis and y-axis and lay out these axes in terms of more versus less. They then plot each position taken in the debate on the chart. The output of this process are maps that allow the researcher to systematically analyze the issue and the audience to grasp the big picture. To this end, researchers "should anticipate doing multiple versions of each positional map, showing multiple ways of representing a particular issue and the positions taken on it" (Clarke et al., 2018, p. 168).

Positional Maps of Production and Growth within Open Education

As I sought to plot the scale-related positions taken within the survey responses, annotations and focus group transcripts I found coding them as aligned with either prescriptive production and/ or holistic growth was tremendously generative. Using this process, I developed two positional maps: the Prescriptive production map of open education (Figure 25) and Holistic growth map of open education (Figure 26) in which I have plotted the scale-related positions described by my open educator participants throughout my research. In both maps, the x-axis represents the level of standardization in terms of open educational content, tools and practices, and the y-axis represents the size of the learning initiative. Although I mapped these scale-related positions on two separate maps, it is important to emphasize that in many cases, multiple positions were often held simultaneously by individual actors and groups. Later in this chapter, I use a series of positional pairs to further explore the complexities of these simultaneously held positions.

The arrows on the maps represent the typical trajectory of open educational initiatives that begin small and scale up over time, but they can, in fact, move through the positions mapped in any direction.

As post-structural analytic tools, these maps are always connectable and modifiable. Over time, open

educational initiatives move and shift, inhabiting different scale-related positions; they can inhabit

multiple positions on multiple maps at one time. At the same time, it is possible that some positions on

the map are not currently inhabited. As a result, the positional maps represent not only what is, but also

the possibilities, that *might be* in the future.

Prescriptive production map of open education. The Prescriptive production map of open

education (Figure 25)[15] charts the scale-related positions described in my survey responses, annotations

and focus group transcripts that align with the production model of scale associated with prescriptive

technologies (Franklin, 1999).

Figure 25

Prescriptive production map of open education.

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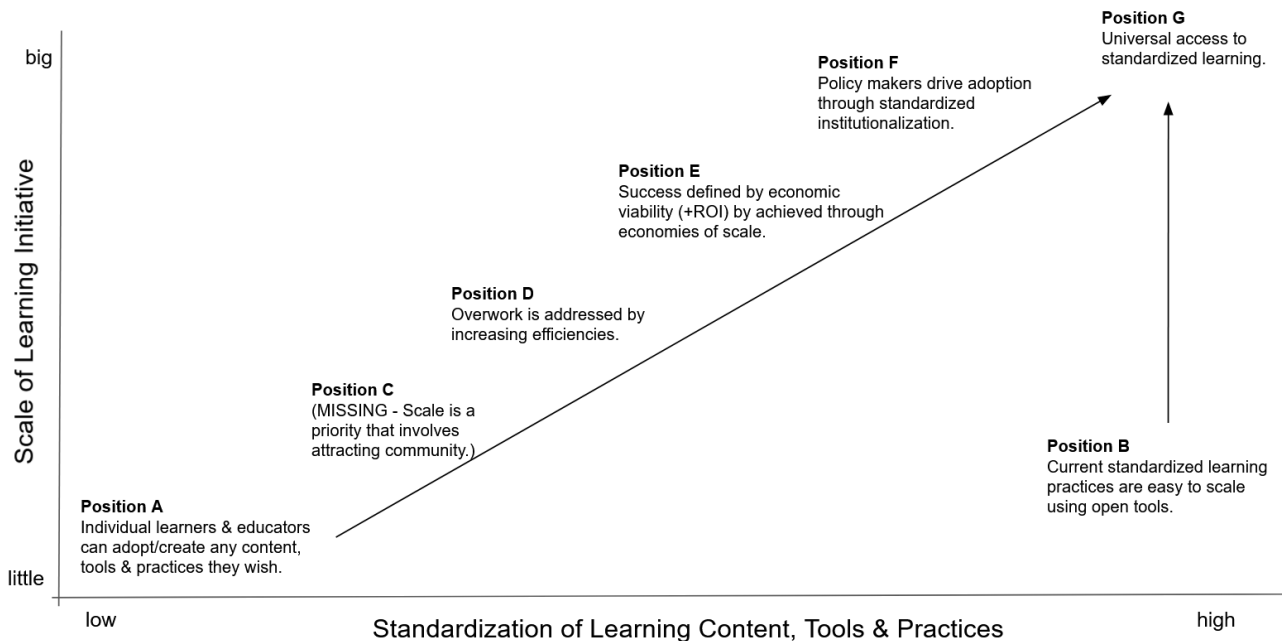
[15] A larger version of this figure is included in the Appendix.

Within this map, Positions A and B illustrate that at a small scale, learning content, practices and tools can support both low (Position A) and high (Position B) levels of standardization. From these starting points, this map delineates two linear paths towards standardization of learning at scale over time.

Learning becomes more standardized as it scales. At Position A, learners and educators are in control of how and what they share. As initiatives continue to increase in scale, they move from individual to community-level efforts, as illustrated by Position C. From there, as discussed in the previous chapter, additional increases in scale can often result in overwork among open educators. Position D represents the prescriptive production solution to the problem of overwork by adopting more efficient approaches and reducing redundancies among learning content, tools, and practices. According to prescriptive production, increasing scale is associated with an increasing interest in achieving a positive return on investment (ROI) as described by Position E. As discussed in Chapter 3, this economic definition of success is often important to philanthropic organizations, institutions and governments that fund open education projects who seek to achieve economic viability by achieving economies of scale. Position F represents further increases in scale that are achieved as the above economic viability encourages policy makers to drive higher levels of adoption through institutionalization, a process that further decreases levels of learner and educator agency and increases standardization. The second line starts at Position B where learning content, tools and processes are already heavily standardized and, therefore, represent an opportunity to achieve learning at scale through the replication of what already exists.

Regardless of the starting point within this map, the positions on this map trend linearly towards Position G where universal access to learning is enabled through the ever-increasing standardization of content, practices, and tools. According to the prescriptive production model, scale is achieved by increasing efficiencies through the division of labour and by adopting tools and practices that increase

compliance. As a result, according to the positions outlined in this map, small-scale open education is associated with elevated levels of localization and agency that are increasingly standardized as open education initiatives increase in size.

Open education's relationship with prescriptive production. The open educators who participated in my research had strong feelings about this prescriptive production approach to scale. In one focus group, Jess expressed concerns about financial motives that drive scale-related decisions within the wider field of education: "Scale is squarely about the economics of education. An institution tries to get the most students enrolled in a particular course or institution without spending much time thinking about the impact on teaching and learning." Tracy expressed similar concerns in the other focus group:

> Institutions are focused on return on investment. They ask, "If we are putting money in, what are we getting out in terms of work product? What changes have happened as a result of our investment in terms of a 'scaled up' version of open? How is it scaling globally?

Charles connected Tracy's comments back to the desire for efficiency that underlies the production model by asking the following questions, "What does scale really mean? To scale the good things and bad things? That's just about efficiency. But what about doing what is right?" Both in my survey and in the focus groups, most of the open educators who participated in my research expressed similar concerns about open education being used solely to standardize and/or achieve efficiencies.

The positions illustrated within the Prescriptive production map have deep roots within open education. As described in Chapter 2, prior to the advent of the internet, open education was consistently associated with this kind of prescriptive production model. As discussed in Chapter 3, despite its initial transformational desires, contemporary internet-enabled open education has likewise often achieved

scale according to this model. This map also aligns with the scale-centric business models associated with most of the social worlds active within the arena of open education as seen in Chapter 5.

Holistic growth map of open education. The Holistic growth map of open education (Figure 26)[16] charts the scale-related positions described in my survey responses, annotations and focus group transcripts that align with the holistic growth model (Franklin, 1999).

Figure 26

Holistic growth map of open education
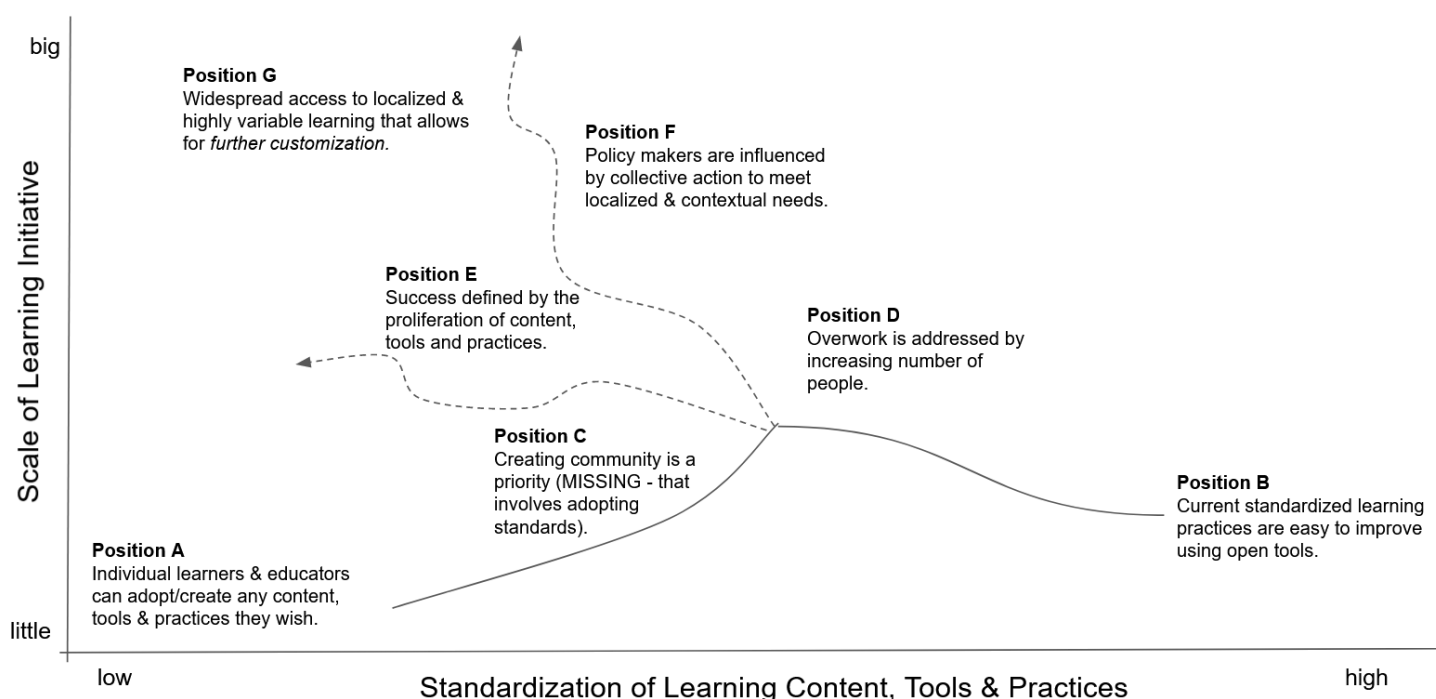
As seen in the previous map, Positions A and B illustrate that at a small scale, learning content, practices and tools can enable both low (Position A) and high (Position B) levels of standardization for learners and educators. From these starting points, this map illustrates a series of non-linear paths through which growth-led open educational initiatives *may* scale over time in ways that resist standardization and continue to enable high levels of customization and agency among learners and educators.

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[16] A larger version of this figure is included in the Appendix.

Learning scales in agentic but unpredictable ways. Starting from Position A, learners and educators can scale up their individual efforts by engaging in small, collective activities that tend to adopt community learning standards. Position C recognizes the importance of developing community within open education. Position D suggests that overwork ought to be addressed by drawing in additional people, thereby increasing the redundancies within the system. Position E then defines success in terms of the proliferation of diverse learning content, tools, and practices. As illustrated by Position F, policy makers can be influenced to support localized and contextual needs through collective action. According to the positions taken within this map, the small-scale, standardization represented by Position B is seen as an opportunity to improve the quality of learning using open content, tools, and practices. From this position, open education involves the transformation of standardized classroom-based learning practices to enable higher levels of agency and customization among learners and educators.

Whether starting from Position A or Position B, the dotted arrows progressing towards Position F illustrate a non-linear relationship between the size and level of agency and customization enabled by educational initiatives that *might* result in increased scale. According to this map, achieving learning at scale does not require standardization, but instead involves the proliferation of diverse localized approaches. It is important to remember, however, that growth is highly unpredictable (Franklin, 1999). Although open education initiatives *can* grow according to this model, the rate and speed of growth cannot be guaranteed.

Open education's relationship with holistic growth. Unlike the production model of scale, the growth model of scale has rarely been discussed directly within the open education literature. Despite these silences and their difficulties clearly articulating their scale-related positions, the open educators who participated in my research often described approaches to

scale aligned with this holistic growth model. Their primary interest was consistent personal and academic growth among the students with whom they worked. One survey respondent explained, "All elements of the experience were small, but they mattered to the student, their family, me, and others who might come into contact with their work. As connections grow, it might eventually become bigger, but it definitely began small." Another contributor described how they hoped big, open spaces might enable similar types of personal growth within the context of an open, online course, saying, "Big sets the stage in terms of challenges and stepping into things that students have not done before. The course throws a lot at them and almost every single student gets to go beyond what they have done in other classes."

Scale-Related Positional Pairs

As described above, the prescriptive production and holistic growth approaches to scale, set up another binary to be troubled. As mentioned earlier, the open educators who participated in my research demonstrated a high level of ambivalence with respect to scale. To that end, I carefully compared the positions taken across the two maps. The resulting "positional pairs" highlight how the mechanisms of production and growth often look the same or similar when initiatives are small. It is only as they begin to scale up that production- and growth-aligned scale begin to diverge, first in subtle and then in more pronounced ways. In the following section, I consider seven positional pairs that better explain these shifts over time.

Positional pair A: Individual learning. As described above, Position A is the same on both maps. It represents open education at the smallest possible scale (Figure 27).

Figure 27

Positions A on the production (left) and growth (right) positional maps.

Position A
Individual learners & educators
can adopt/create any content,
tools & practices they wish.

Position A
Individual learners & educators
can adopt/create any content,
tools & practices they wish.

According to this position, small-scale open education enables an elevated level of agency and customization because individual learners and educators can adopt and create content, tools, and practices according to their own specific needs. These learners and educators can develop their own rules and tools for sharing. One survey participant explained that little open education "enables agility and awareness of what is needed. We add what we want when we see a need for it." My research participants consistently emphasized that new open education initiatives start small. These emerging initiatives are consistently associated with high levels of agency and customization for learners and educators; they feel liberatory when new and small.

Positional pair B: Standardized practices that are easy-to-scale vs. easy-to-transform.

Positional pair B refers to relatively small-scale, classroom-based teaching practices that involve standardized content and practices, including lectures, textbooks, and standardized tests. As discussed above, Position B is in the lower righthand quadrant of both positional maps (Figure 28).

Figure 28

Positions B on the production (left) and growth (right) positional maps

Position B
Current standardized learning
practices are easy to scale
using open tools.

Position B
Current standardized learning
practices are easy to improve
using open tools.

Importantly, these positions differ in terms of how standardized practices ought to be addressed. Where the production model sees these standardized practices as *opportunities to scale*, according to the growth model, these same practices offer *opportunities to improve* learning experiences.

Scaling up existing standardized content and practices. Position B as set out on the production map suggests that standardized learning content and practices are easy to scale and ought to be scaled using open tools. Charles offered an example of this position:

> Take the classic first year undergraduate lecture with 500 young people and one
>
> professor at the front of the class. We have taken that as a norm, simply because it is
>
> a time-honored tradition. I think the idea of scale implies that we can just keep doing
>
> the same thing but doing more of it in a more efficient way, as opposed to
>
> transforming our practices.

Charles then offered an open education example. He explained, "Open textbook creation involved mapping the old processes and pedagogy associated with proprietary textbooks onto open ones that resulted in cheaper textbooks for students but that did not radically change learning content or tools." Agreeing with Charles, Tracy further noted that open textbook initiatives "worked because they used the same processes, only shifted to a digital space." My research participants consistently recognized this position and its enactment throughout large-scale approaches to open education, particularly in terms of open textbooks and MOOCs. Few, if any, held this position themselves.

Changing standardized practices. Position B on the growth positional map focuses on replacing small-scale standardized content and practices with approaches that enable higher levels of agency and customization among learners and educators. Tess emphasized the importance of supporting students in the application of knowledge in ways that were personal and contextual. Sara highlighted the importance of having "someone who is at the caliber of the professor who is able to read long research papers closely and respond to them as a human." Most of my research participants expressed a similar interest in open education not as a mechanism for production-driven scale, but rather, as a means to

question and transform teaching and learning in all contexts, such that it will support learning that increasingly becomes more generative, reciprocal, and contextual.

Positional pair C: From individual to community. Position C represents an interesting and important positional pair that describes the purpose of community-level open education initiatives according to the production and growth positional maps.

Figure 29

Positions C on the production (left) and growth (right) positional maps

Position C
(MISSING - Scale is a priority that involves attracting community.)

Position C
Creating community is a priority (MISSING - that involves adopting standards).

Scale as a priority. Position C on the prescriptive production map was the one position not directly described by any of my research participants. According to this position, attracting new users/participants by creating a sense of community is a necessary *intermediary* step when seeking to achieve scale. One survey respondent, did however, offer an example of how a big open education initiative exhibited more community-aligned behaviours when it was small. He explained:

I felt compelled to capture a moment in time in the history of the OpenStax project where it behaved small, even with a big ambition. In my view, small behaviours include more voices more authentically. OpenStax has no reputation for being small, but at the onset of the project, it really did exemplify some key small behaviors in communication and dialogue.

This comment demonstrates how new initiatives and technologies, regardless of their long-term intentions with respect to scale, in the initial stages tend to feel participatory, reciprocal, and communal. Taken further this position suggests that to achieve scale, platforms, projects, and initiatives *must* start by drawing participants in by appealing to our need to enter into community with like-minded people.

Community as a priority. My research participants consistently prioritized community creation over achieving scale. In a map annotation, Tess described the benefits of "a unique group of people, their context and their coming together" to learn. Describing an initiative that involved a group of professionals learning/building something together, one survey participant explained, "the grassroots nature of the project allowed us to start small in many ways: learning on our own time, not having to meet particular deadlines, allowing us to shape the initiative based on our own local needs and preferences." These community-focused comments closely align with the "community as priority" focus of the early constructivist MOOCs (Downes, 2017) and Position C on the growth positional map.

Missing positions. The missing Position C on the prescriptive production map suggests a significant lack of awareness among open educators with respect to how achieving scale via the production models relies on attracting people into community when they are small, only to later leverage community-based vulnerabilities to continue to increase in size over time (Cottom, 2017). At the same time, my research participants described community-building in overwhelmingly positive terms and did not acknowledge the tensions inherent in building online communities and developing community standards (Elias et al., 2020). These missing positions suggest a need for open educators to critically question how, where, and why online communities are being created.

Positional pair D: Addressing overwork through increasing efficiencies or adding people. Where Position D on the production positional map seeks to address overwork through increasing efficiencies, Position D on the growth map addresses overwork by drawing in more people (Figure 30).

Figure 30

Positions D on the production (left) and growth (right) positional maps

Position D
Overwork is addressed by increasing efficiencies.

Position D
Overwork is addressed by increasing number of people.

The open educators who participated in my research took both these positions, sometimes simultaneously.

   Addressing overwork through efficiency. As discussed in Chapter 5, the open educators who participated in my research consistently expressed concerns related to overwork and not having sufficient resources to achieve the transformation they desired. Sara further noted that small teams can quickly get overworked, which can constrain their transformational capabilities. These positions reflect the realities of economic constraints faced by open educators and the ways that these constraints may encourage some open educators to adopt production-aligned approaches to scale.

   Addressing overwork by adding people. The participants in my research tended to resist open educational approaches that increased the student-teacher ratio directly; they tended, instead, to take the position that open education at scale could be achieved in other, more holistic ways. As noted in the previous chapter, Sara advocated for scaling up open education by adding more facilitators, often by drawing students and other participants into the role of facilitators. She wondered "why is that never the solution that is put forward?" In the other focus group, Tracy imagined a similar distributed, growth-aligned approach for scaling up open education that involved crowdsourcing, rich conversations and relationship building in ways that challenged the status quo in higher education.

   Complicated tensions and nuanced awareness. Based on these examples, open educators demonstrate a lack of awareness of the complicated tensions between production and growth approaches as represented by the Positional pair D. My research participants consistently recognized that big approaches to education acted in alignment with production models, reducing the ability of instructors to respond and adapt to the specific and contextual needs of their students. At the same time, many of them felt that it was critically important to continue to scale up their transformational, open approaches to education. Given the silence that surrounds these tensions, it is easy to see how resource-constrained

open educators seeking to extend their reach might unintentionally fall into prescriptive production-

centric patterns that involve the division of labour or move towards increasingly standardized

approaches to teaching in response to resources constraints.

Positional pair E: Economic viability & efficiency or innovative sharing & proliferation. It is at

Positional pair E that the positions taken by the production and growth models begin to diverge in

significant ways (Figure 31).

Figure 31

Positions E on the production (left) and growth (right) positional maps

Where the production model measures success in terms of economic viability and efficiency, the growth

model measures success according to innovative sharing and the proliferation of ideas.

Economic viability and increasing efficiency. One example of the production-aligned Position E

came from Tracy, who described a foundation-funded open education network that she used to work for.

Funded by the Hewlett Foundation, they were under immense pressure to demonstrate the large-scale,

measurable changes achieved because of the foundation's investment. One survey respondent offered

another example of this approach to scale within the OpenStax project:

> As the initiative took shape and started to get bigger, we did start thinking about/learning
>
> about some bigger things like standardization among OERs with respect to peer review,
>
> copyediting, accessibility, etc.—opportunities to create standards that could be applied at
>
> scale but may limit individual creators/learners in what they want to do.

Among the open educators who participated in my research, increasing efficiency was also sometimes

identified as a way to achieve more with existing resources. For example, within one of the focus

groups, Sara suggested that content-related tasks, like creating pre-recorded lectures, could be divided up between a group of people teaching the same course, which would "give everyone more time to spend individually interacting with their students." These comments highlight how prescriptive production approaches to scale involving increased standardization and the division of labour can/have been used to scale up open education efforts.

Increased sharing and proliferating redundancies. My research participants shared several other examples of open education that measured success according to their levels of innovative sharing and proliferating practices and tools. Kathleen explained:

> The idea of having heterogeneity in systems is really important. We've seen such concentration in ownership of software and platforms. Having heterogeneity is good insurance because if one platform gets bought out by a huge for-profit company, which happens all the time, at least we haven't put all of our eggs in one basket.

Tracy responded to Kathleen's comment:

> Big companies can't scale small, artistic products in grassroots, small communities. Those things don't scale for big companies because there's no money to be made. Who's going to buy it? By creating it ourselves, we remain the keepers of our knowledge.

A survey respondent further explained that using localized and distributed approaches could make open education more "accessible to small institutions, creating more access and diversity." These comments suggest that open educators strongly believe in sharing innovative practices and enabling collective action in ways that support the proliferation of ideas and increasing levels of redundancy.

Positional pair F: Governmental policies as influential vs. influenced. Positional pair F relates to the role of poly makes in influencing learning content, practices, and tools (Figure 32).

Figure 32

Positions F on the production (left) and growth (right) positional maps.

Position F
Policy makers drive adoption through standardized institutionalization.

Position F
Policy makers are influenced by collective action to meet localized & contextual needs.

The production-aligned position F argues that government support drives increasing levels of awareness and adoption of open education, thereby increasing standardization. In the growth map, Position F argues that collective action can influence government policy to support increasing levels of agency and customization. Again, my open educator research participants held both positions.

     Policy influences adoption of open education. On the production map, Position F suggests that national/large-scale policy and research drive scale by increasing awareness of open education. One survey respondent described work that supported a national OER initiative. He said, "the big projects have greater impact in terms of awareness of OER /OEP at the management and policy level." According to the production model, national policy generates increased interest, often in terms of financial return, among decision makers, which is critical for further increasing the scale of open education. Based on my research, it is unclear how many of the open educators who participated in my research supported this position.

     Policy is influenced by collective action. On the growth map, Position F holds that national and large-scale policy can be influenced by collective action. Many of the open educators who participated in my research highlighted the need for small-scale projects and initiatives that cause people to begin to think differently which they believed would have an impact on policy. One survey participant described the impact of participating in an open online course.

> The impact was large because of the numbers of participants and because people took the
>
> information and connections with them to enact larger changes at their organization or

institutions. I frequently say that course changed my life because it was the beginning of

me having deep connections with many people I've never met, which continue to this day.

Another survey contributor expanded on this idea, suggesting that ideas of openness are not "out there" to

be found, but rather, "brought into being through practice." According to these open educators,

educational change is not something led by large-scale policy changes. Instead, it involves the slow work

of changing mindsets over time; it involves patience, trust, and persistence. One survey participant

described her contribution to open education as follows:

> I really cannot make claims to big except for persistence over time: I have been teaching
>
> open courses online for almost 20 years, so I have taught 3000+ students over that time…
>
> Everything else about what I do is small. :-)

This slow, inefficient, and persistent approach to open education has consistently been

overshadowed by larger-scale approaches and may deserve more attention.

Positional pair G: More of the same or more that is different. Position G represents the

ultimate divergence on the production and growth maps (Figure 33).

Figure 33

Positions G on the production (left) and growth (right) positional maps.

Position G
Universal access to
standardized learning.

Position G
Widespread access to localized &
highly variable learning that allows
for *further customization*

More of the same. On the production map, Position G is in the upper left of the map, where a

single experience/version of content enables universal access to learning. Although none of the open

educators who participated in my research held this position was, many participants were keenly aware

of its implications within their specific contexts. In a map annotation, Tess described Position G on the

production map and her feelings about it:

Scale is used to speak more to the economics of education. Scale means reach more people

with the same content and is OFTEN divorced from pedagogy or critical pedagogy. It is in

my mind a myth for certain types of material. You can't scale learning about some topics

and still get the depth and breadth of a learning experience.

Many of the open educators who participated in my research had strong negative reactions to this

production-aligned Position G. It tended to run counter to their fundamental beliefs about

education and their reasons for engaging in open education. Moreover, they were reluctant to

discuss open education initiatives that have moved in this direction.

More that is different. In contrast, growth-aligned Position G *may* trend to the upper left of the

map, where large scale is achieved via distributed and localized experiences/content that are embedded

within communities who further customize to meet their own needs. Chapter 5 highlighted Charles's

interesting insight into what the growth model of open education might look like at scale, suggesting

that this approach involves ongoing customization and high levels of localization. Like Charles, Sara

highlighted the need for more people in the map annotations:

It also requires much more distributed facilitation where you trust learners to trust themselves to

become lead learners and support others. For me, this is how you do care on a massive scale; not

ask one person to care for a thousand, but to nurture a sense of care and responsibility for others

in small groups with people who are not the main facilitator but a support team.

Tess responded by annotating, "It strikes me that one of the most important prerequisites to that kind of

distributed care is setting the tone and creating space for others to find their 'lead learner' feet."

Throughout the map annotations and survey responses, my research participants consistently

echoed the importance of localized approaches. Within the map annotations, for example, Jonah

suggested that "when students are empowered as creators or co-creators of their own learning material,

it can be transformational for them in terms of their perspective of how learning materials are created and consumed," and Tess wrote, "taking a customized approach to pedagogy fundamentally shifts the relationship and the feelings of participants (students) into collaborators who are making something unique—a context and experience."

Positional Maps and Scale-Related Choices

Positional maps are powerful post-structural tools that can help in analysing issues of debate and in untangling contradictory positions. The production and growth positional maps presented in this chapter delineated two dramatically different approaches to scale. They demonstrated that, as suggested by my research participants in Chapter 5, educational initiatives *can* get both bigger *and* retain high levels of agency and customization for learners and educators *if* grown in holistic ways. At the same time, they help to explain why little open education is consistently associated with holistic characteristics whereas big open education is not. When working at a small scale, learners and educators are more likely to be in control and able to make decisions that align with their contextual needs; they decide what they need and how to achieve it. Moreover, because little open education initiatives often take place outside of or on the fringes of, educational institutions, they can offer opportunities to escape the bureaucracy associated with educational systems.

As already discussed, some of the open educators who participated in my research embraced staying small. For many others, however, scaling up their efforts was important. However, as seen throughout this chapter, production-aligned and growth-aligned scale can be difficult to differentiate at a small-scale. In addition, while the benefits of holistic growth are appealing to open educators, they are also inefficient and unpredictable. Where workloads and transformational aspirations are high, more prescriptive approaches may be enticing. This is likely especially true where open education initiatives begun by volunteers quickly garner attention. Adopting a few prescriptive processes, tools and/or

funding agreements can offer viability and a predictable path to scale. As one survey contributor explained,

> I don't think we have much that is truly big right now. The funding may change that. I guess the bigness that comes with funds is that people on the project who were working for free can now get compensated and that's a good thing. It can help the project grow more. Thankfully, our funders were flexible to fund whatever WE WANT and recognized the openness and the non-traditional openness with social justice values beyond saving textbook costs.

She was hopeful that the money could help support further extending the organization's reach and enable ongoing growth in distributed ways.

At the same time, because of the silences that surround the topic of scale within open education, scale-related intentions are rarely discussed. As a result, open educators can and do simultaneously advocate for distributed redundancies and standardized efficiencies. They seek to demonstrate economic viability and encourage the diversification of content, tools, and practices. Although none of these positions are necessarily "right" or "wrong," they do represent contradictory positions that are rarely challenged or fully interrogated. For many open educators the question, as voiced by Sara, is "What can we scale without losing?" These positional pairs offer important insight into that question as with each successive position something was, in fact, lost, whether in terms of size, efficiency, predictability and/or learner and educator agency. Framed in a positive way, perhaps we ought to ask: "What is essential that we retain?"

According to the positional maps presented in this chapter, scaling up is an ongoing decision-making process, a process of continuously choosing what matters most. Through this lens, the positional pairs offer the following choices: To stay small or get bigger (Positional pair A), to

replicate or transform educational opportunities (Positional pair B), to see community as a priority or as an intermediary step (Positional pair C), to increase efficiencies or redundancies (Positional pair D), to trust or seek to influence leaders (Positional pair E) and to standardize in predictable ways or to cede control and decision-making power (Positional pair F). Framing these positional pairs as choices is not meant to insinuate that these are easy choices, or choices without consequences, but instead to suggest that if open educators aspire to large-scale transformation of educational systems, they must critically consider the implications and mechanisms of scale and openly discuss the trade-offs associated with each of their scale-related decisions.

Chapter 8: Discussion and Conclusions

My research study has been guided by the following research question: How do open educators perceive the mechanisms and implications of scale? As noted at the end of Chapter 1, I asked this question not to seek a specific answer, but instead, to invite a group of open educators to deconstruct the concept of scale within the field. To this end, my study was qualitative, critical, and tentative. It sought to elucidate differences, reveal contradictions, and explore the silences surrounding the topic of scale within open education using the situational analysis theory/methods package (Clarke et al., 2018). As I had hoped, my participants consistently complicated my research, generating diverse ideas, questions, and new ways of thinking about the implications and mechanisms of scale within the field of open education.

I begin this chapter by first summarizing my research study. I then discuss nine findings that have emerged from my multi-dimensional exploration of the implications and mechanisms of scale within open education. These findings relate to three topics: situational analysis theory and methods, open education's big intentions and scale-related intentionality. I end the chapter by sharing my conclusions regarding the risks associated with prevailing prescriptive production patterns of scale and the possibilities that might emerge from intentionally and explicitly choosing to create new patterns of scale within open education. I hope that my work offers a useful contribution to other researchers in the field of open education and beyond.

Research Summary

In Chapter 1, I described an accidental encounter with Franklin's (1999) description of prescriptive production and holistic growth that helped me to better understand how scale, both big and small, had influenced my own learning conditions and practices within open education. In Chapter 2, I traced the history of big, production-aligned and little, growth-aligned open education, a history that is deeply entangled with the desire to both transform and increase access

to educational opportunities. Drawing from these patterns, I developed a conceptual framework of big and little open education that has guided my research. In Chapter 3, I applied this framework of big and little open education to the field's academic literature, emphasizing how open education's implicit and explicit interest in scale has often resulted in big gains for corporations and institutions at the expense of others, including students and educators. While writing these chapters, I noticed the silence surrounding the mechanisms of scale within contemporary, internet-enabled open education. As a result, my research has focused increasingly on making sense of these complicated scale-related silences. In Chapter 4, I introduced situational analysis, a post-structural theory/methods package that uses a series of qualitative mapmaking techniques to unveil nuanced positions and make silences speak (Clarke et al., 2018) that lent itself well to my ongoing exploration.

The next three chapters were each dedicated to one of the situational analysis mapping techniques. Together, they form a multi-dimensional representation of open education's complicated relationship with scale. Using the data from the open educators who participated in my research as a starting point, Chapter 5 explores a series of big social worlds and their impact in the arena of open education. The exploration of these adjacent social worlds told the story of the business of open education, explaining the roles of corporations, institutions, and governments in shaping what open education looks like, how it functions and whose needs it serves. It emphasized that open education sits at the nexus of many big and powerful social worlds with deeply engrained prescriptive patterns and an interest in accumulating and exerting increasing levels of control within educational systems. It further helped to explain why open educators might see prescriptive production as the only viable approach to scale and, consequently, seek to avoid the topic altogether.

In Chapter 6, I used a collaborative relational mapping process to represent open education as defined by my research participants, many of whom see open education as a means to escape the bureaucratic and prescriptive patterns of mainstream technological and educational systems. Through this mapping process, I came to understand that their scale-related silences were often the result of a tacit awareness of the need for an alternative approach to scale that they struggled to clearly articulate.

In Chapter 7, I used two positional maps to further analyze my research participants' complicated scale-related positions. Plotting their contributions on the positional maps, I found that as a group, they could mostly articulate the scale-related positions taken by and/or expected of both the prescriptive production and holistic growth models. Using a series of positional pairs, I then highlighted how nuanced positional shifts at the small-to-medium scale can lead to dramatically different approaches as initiatives scale up over time. These positional pairs further helped to explain why, where scale-related intentions are not made explicit, it is easy for open educators to fall into the prevailing prescriptive patterns of achieving scale. The purpose of my work has been to carefully consider the implications, mechanisms, and beneficiaries of scale, both big and small, within the field of open education.

Research Limitations

I adopted a methodology and methods that would enable a high level of reflexivity. My intention was not to seek "solutions" or to "achieve consensus" but instead to generate new ways of thinking about scale within the field of open education. In this section, I describe limitations associated with this approach.

Methodology. Situational analysis is a new and emerging methodology that seeks to more push qualitative research around the post-structural turn. As a result, my research findings are not

intended to be definitive, or even representational, but rather a view of a situation of open education as presented by a specific and small number of open educators at a specific point in time (late 2020).

Methods. In keeping with the tentative and exploratory nature of my research, there are limitations associated with my methods. My research participant selection and sampling processes were not random. I sent the initial "open" call to participate in the online survey via my Twitter and Mastodon social media accounts. As a result, the reach of survey was limited to the reach of my social networks and those who retweeted it, a process that resulted in the invitation receiving 8000 views. Moreover, it is likely that participation was reduced because I sent out the invitation in late August 2020, just as many open educators were focused on preparing educators for their first online and/ or hybrid school year.

Moreover, some of the open educators who responded to my survey and indicated an interest in participating in Phases 2 and 3 were unable to due to competing priorities. As a result, I recruited additional research participants from the open educators who showed the willingness and ability to engage in my research while presenting my early research at conferences. Moreover, my research was focused on the scale-related perspectives of open educators. As a result, the perspectives of students and educational administrators were not considered. Because of this approach, the maps presented in my study are necessarily partial and incomplete, representing not *the* situation of open education, but instead *a* situation of open education as delimited by its participants and the point of time in which it was completed. In addition, Google Draw was not the optimal mapping tool, which reduced engagement during the activity and hindered participants to reflect on the connections made by others during the focus groups.

Findings and Areas for Future Research

Through my research, I identified nine findings related to the three themes of situational analysis theory and methods, open education's big intentions, and the importance of scale-related

intentionality within open education. I discuss each of these findings in more detail in the following section.

Situational analysis theory and methods. I adopted the situational analysis theory and methods to guide my research without fully understanding where it would lead. Throughout my research, situational analysis offered a post-structural approach that made connections visible, thereby foregrounding power relationships and enabled opportunities for collaboration, while avoiding confirmatory research. I share my methodological and methods-related findings in the hopes that they might be helpful to future researchers.

Making connections visible. Situational analysis is an emerging research theory and methods package that offers a systematic approach. It embraces the complexity of "the big picture," something that is rarely undertaken in qualitative research. As I began to work through my research data, I continuously reminded myself to trust the process, even when I did not understand it; I followed my maps, even when I did not see connections between them.

When I shared the first draft of my relational map with my supervisor, she asked how it related to the topic of scale, and I did not have an answer. Rather than worrying about that apparent disconnect, I instead followed the relationships that it did identify, carefully reflecting on each annotation and connecting it to my other research. Clarke et al. (2018) explained that "it is difficult to see what one does not expect. It is even more difficult to see what one does not grasp or understand! And it is yet even more difficult to see complexities and hear silences" (p. 173). Keeping these words in mind, I continued to follow the situational analysis process, developing my social worlds/arena and positional maps.

Over time, I began to see repeating big-little, prescriptive-holistic, and production-growth patterns throughout my maps. I then followed the above patterns back into the longer history of open

education (Chapter 2), where I found that distance education scholars had regularly associated big open education with prescriptive production and little open education with holistic growth in ways not evident after the advent of contemporary, internet-enabled open education. Following these silences eventually led me to conclude that early excitement about the disruptive nature of the internet combined with an influx of new people into the field of open education led to scale being treated as either inherently positive or innocuous (Chapter 3). By trusting the situational analysis mapping processes, I gained a deeper appreciation for my open educator participants, who were often tacitly seeking to avoid big, prescriptive, production-driven open education (Chapter 5) while struggling to clearly articulate alternatives (Chapter 6). I was then able to use their ambivalent and contradictory positions to map production-aligned and growth-aligned scale-related positions (Chapter 7).

Trusting the situational analysis processes allowed me to make sense of the complex entanglements between open education and other powerful social worlds that are rarely discussed. It further allowed me to make previously hidden connections visible. As a result, I encourage other educational researchers to use situational analysis and use its mapping processes to make sense of complex and/or apparently contradictory research data, even when as a researcher you do not (yet) understand their relevance.

Moving towards collaborative mapping. Clarke et al. (2018) described the systematic analytic mapping work involved in situational analysis as the work of an individual researcher. Building on their methods, as described in Chapter 4, I experimented with a participatory approach that engaged my research participants in the relational mapping process. To that end, I did not generate the initial messy map independently, but instead used the anonymous survey and its 6,000+ words of responses to populate a messy map with many ideas, actors and actants, many of which I would not have identified on my own. In the process, the open educators who participated in my research helped me to delineate a

contextual, personal, and relational "situation of open education" not typically represented in the academic literature and mainstream media. Moreover, my research participants picked up concepts like overwork that were included in the map based on the survey responses in ways that I had not anticipated. Because situational analysis is defined as a post-structural research methodology that embraces situations of inquiry that are dynamic, partial, and incomplete, my decision to engage my research participants more fully in defining and analyzing a situation of open education feels like a natural extension of situational analysis that deserves more attention.

I then directly engaged a smaller subset of my research participants in a relational mapping activity. The results of this experiment were mixed. The asynchronous nature of the relational mapping activity allowed participation according to participants' own schedules. This flexibility was critical to my ability to complete my research, which took place during the pandemic. In addition, the asynchronous nature of this process supported widened access in terms of time and space, enabling global participation. Participants engaged by adding lines connecting elements, comments, colours, and shapes. The process encouraged them to become aware of their own biases and forced them to reflect on issues that they had not previously considered. In these ways, the collaborative relational mapping was a success.

At the same time, the tools that I used for the collaborative mapping activity presented challenges. After experimenting with several options, I set up the collaborative map using Google Draw, a tool that allowed participants to easily connect, move and annotate items on the messy map. The map, however, quickly became overwhelming, especially for late-arriving participants. Charles noted that it was an activity best done "in small bites." Moreover, due to the protracted period during which it took place, it was difficult to generate interaction and sustain engagement between participants. If I were to repeat this collaborative mapping activity, I would seek out a tool that more

easily organized the information. One focus group participant, for example, suggested the use of a more dynamic mapping tool that would enable interrelated mappings that reconfigure as connections are made. In addition, I would sort and organize the map and re-share with the participants in advance of the focus groups, something that would have served to better focus those conversations.

Despite the challenges and opportunities for improvement described above, my participatory approach to situational analysis succeeded in drawing research participants into a rare process of collective sensemaking. The challenges that I experienced setting up the mapping exercise and the comments from my participants point to an opportunity to develop a much more robust toolkit to support collaborative situational analysis, mapping, and asynchronous approaches to research more generally.

Avoiding confirmatory research. As discussed in Chapter 4, I undertook my research with the open educators aware that this field has historically been criticized for self-confirming research (Mackness & Bell, 2015; Mejias, 2013; Rolfe, 2016; Selwyn, 2016). From the outset, I took a series of steps to counteract a confirmatory research approach, including initiating my research with an anonymous survey and engaging my research participants in the relational mapping process.

As I engaged in the situational analysis mapping processes, it generated an interesting kind of "structured breadth" that further guarded against confirmatory research. Each of the three mapping techniques forced me to consider the issue of scale within the context of open education from different angles. The collaborative relational map offered a view of open education as described by educators engaged in the field on a day-to-day basis. These open educators tended to present their work in a positive light, often highlighting its transformational and holistic possibilities. The social worlds/arena map involved taking a step back and carefully situating their work within larger power structures. Considered from this angle, open education appeared deeply entangled with prescriptive realities.

Comparing these maps challenged me to take a "both/and" approach; both maps represented accurate, though dramatically different, representations of the situation of open education.

The positional mapping process then required that I map and treat all scale-related positions taken within my research on their own terms, something that Clarke et al. (2018) described as "a radically democratizing move, a *politics of the acknowledgement of presence* instead of denial and representing of diversity" (p. 174). Considering every position as equal, regardless of whether it was mentioned once or many times, regardless of whether a series of contradictory positions was held simultaneously by an actor or group of actors, further guarded against confirmatory research and served to rebalance the strongest voices and mainstream sentiments with more marginal thoughts and concepts. Developing these positional maps and positional pairs helped to reconcile the apparent contradictions uncovered in the previous maps.

Building and analysing these maps was a lot of work, far more work than I originally intended to undertake. At the same time, it has generated a robust and multi-dimensional understanding of the implications and mechanisms of scale within open education. As a result, I would agree with Sara, who suggested in her focus group that my research is a form of crystallization (Ellingson, 2014). Each mapping process required me to view open education from a different angle, which allowed me to see something new and better understand the whole.

Contributions to situational analysis. Situational analysis is an emerging qualitative research approach. To my knowledge, my study is the first to apply situational analysis within the field of open education/ educational technology research. As discussed above, it generated a robust and multi-dimensional view of open education that acknowledged without romanticizing the technological processes that underlie the field, offering an important contribution to educational research. At the same time, by introducing collaborative relational mapping into my work, I have drawn ideas of open

scholarship common within the field of open education into situational analysis in ways that contribute to the ongoing development of situational analysis theory and methods by more fully pushing them around the interpretive and post-structuralist turns.

Open education's big, transformational intentions. As discussed in Chapters 3 and 5, a series of massive, powerful entities have big intentions to transform open education in ways that increase their power and financial gain. Although my research participants did not share their interest in financial gain, and some embraced "staying small," there were many others who pointed to a desire/need to scale up their transformational efforts, as discussed in Chapter 6. It is, therefore, possible that "big, transformational intentions" is a defining characteristic of open education in its many forms.

As seen in the positional maps presented in Chapter 7, however regardless of the underlying intentions when the question is "How do we scale up quickly?" the answer will always be prescriptive production in some form; its efficiency and predictability are unquestionable. As a result, open educators who aspire to achieve large-scale transformation are at risk of falling into the same patterns as other big open education initiatives described in Chapter 3. My research suggests that open educators fall into these prescriptive patterns for three reasons: the co-opting of open education, games of scientific language and overwork among open educators.

Co-opting open education. From the massive institutional MOOCs that bear no resemblance to connectivist MOOCs, to the language of open access and educational transformation used by corporations and institutions to market new online programs, the co-opting of open education initiatives for financial gain is not new. As discussed in Chapter 5, many for-profit companies now position themselves as supporting the same goals as those identified by open educators in Chapter 6. These include reaching wider audiences and moving beyond the course. At the same time, they continue to advance their own interests through data-gathering, surveillance, algorithmic decision-making and the use of paywalls and

other restrictions, regularly at the expense of educators and learners.

Sometimes described as "openwashing" (Farrow, 2015; Wiley, 2011), this co-option may have "very real consequences for education and society in general" (Weller, 2014, p. 21). Despite these warnings, open educators have historically been resistant or publicly silent on this issue. As seen in Chapter 3, instead of addressing the issues directly, some open educators have suggested that these efforts might serve to extend the reach of the open education movement (Moe, 2015; Stewart, 2013). Other open educators appear to have refocused their efforts around social justice in an attempt to differentiate their work. In both cases, open educators appear to be supporting and/or avoiding directly confronting these kinds of openwashing. At the same time, commercial entities continue to quickly re-purpose emerging open educational efforts in ways that support an increasingly massive open, scale-centric economy.[17]

As a result, open educators' big, transformational intentions coupled with their silence with respect to the implications and mechanisms of scale, however unintentionally, support corporations,' venture capitalists,' and institutions' ability to maximize financial gain for themselves at the expense of others. Given these realities, I suggest that far more research is required to understand the role that open educators currently play in enabling and/or disabling the co-option and subversion of open education.

Games of scientific language. The games of scientific language can be considered an extension of the above co-option, but one in which open educators are more directly implicated. As described by Lyotard (1984), these games involve a process whereby wealthy individuals, corporations and foundations fund research aligned with their interests. In turn, this research, often conducted at public institutions, serves to legitimate their interests.

As discussed in Chapter 3, the trajectories of the open education funding foci and research output

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[17] See for example the September 2020 press release "Facebook Makes it Easier for Job Seekers to Master Social Media Marketing Skills."https://www.facebook.com/business/news/facebook-launches-a-pathway-to-social-media-marketing-careers-with-coursera

have been closely aligned for the past 15+ years and had generated an open rhetoric that has significantly increased the profile and transformational reach of open educators (Almeida, 2017). As seen in Chapters 5 and 6, the Hewlett Foundation's current funding priorities, for example, align with an apparent increasing interest in OEP among open educators. My research participants were conspicuously silent about this relationship.

Meanwhile, entities active within the arena of open education, including Google, Microsoft, Zoom, Moodle, McGraw Hill and The Open University UK joined UNESCO's Global Education Coalition. Although the coalition does not reference open education specifically, it does seek to achieve large-scale targets associated with online and distance education that began during pandemic-related school disruptions. This coalition has recently released a 107-page report entitled *Global Education Coalition: Acting for recovery, resilience and reimagining education* (UNESCO, 2021) that details a series of technology-enabled research projects conducted across the world. It is likely that most of these studies will reinforce their funders' global efficacy and legitimacy among governments and educational institutions, thereby further extending their reach into the wider educational landscape.

Overwork among open educators. While massive companies are actively supporting open education-related research, most of my research participants described open education work that was voluntary. As discussed in Chapter 6, my research participants consistently identified unfunded labour as a constraint; they were unable to achieve their big, transformative intentions due to a lack of human labour. In response to this constraint, they often sought to draw more people into their open educational efforts. Tess and Jonah, for example, described how by openly publishing their writing on the internet, students could reach a wider, online audience from whom they could receive authentic feedback. They suggested that this online audience could generate meaningful relationships capable of nurturing student growth and encouraging reciprocity. In another example, Sara described how students could be paid

small sums of money to facilitate workshops for increasingly large audiences. These students could learn important facilitation skills working under the guidance of their teacher. These activities appear to align open education with holistic growth.

Considered from a prescriptive perspective, however, the above activities can be interpreted differently. In the first example, the teacher's paid work of providing feedback is shifted onto the unpaid online audience. In the second example, the paid teacher provides the expertise, but the other elements of teaching are transferred to student workers. Both involve dividing the labour of teaching and demonstrate how open educators can unintentionally become implicated in prescriptive efforts to silently decouple knowledge, in the form of expertise and opinions, from the labour associated with teaching. Open education, therefore, involves a series of scale-related choices with associated costs. Using textbooks as an example, where mass-produced commercial textbooks cost money and that cost is borne by students, the costs of creating a more holistic, open textbook could/should be measured in the unpaid time of open educators. As discussed in Chapter 5, because of the pervasiveness of prescriptive technologies within our technological tools and educational institutions, open educational activities are likely to fall into increasingly prescriptive patterns unless careful attention is paid to the scale-related implications of these shifting labour patterns.

Among my research participants, Charles and Kathleen demonstrated the strongest understanding of the relationship between open education, overwork and shifting labour patterns. Charles spoke of the naivete among open educators who believed, in the early days of open education, that they could achieve its big, transformational intentions by relying on volunteers. He explained that he now understood the importance of ensuring that open educational labour is recognized and compensated. Kathleen expressed a similar interest in changing labour structures and patterns and in the importance of collective action. She described her willingness to support work that recognized and

compensated the open educational work undertaken by faculty within post-secondary labour agreements. Their insights suggest that much more work is required to understand open educational labour patterns and to ensure that the voluntary efforts of open educators are not used to shift more unpaid work onto educators and further deskill the teaching profession.

Contributions to open educational research. As discussed throughout this section, my research suggests that big, transformational intentions are a defining characteristic of open education in its many forms, something that puts open educators at risk of falling into the prevailing prescriptive patterns. Building on this contribution, I recommend that future researchers more carefully consider the roles open educators, most often unintentionally, have and can play in terms of co-opting and subverting open education and the deskilling of the teaching profession.

Scale-related intentionality. If open educators are at risk of falling into prescriptive patterns due to their big, transformational intentions coupled with their scale-related silences, it makes sense that scale-related intentionality is an important part of maintaining holistic patterns within open education as it grows.

My open educator research participants consistently expressed a tacit awareness that alternative approaches to scale were possible. As explained by Charles, these open educators believe that "various types of digital pedagogy, and particularly a pedagogy of care, scale differently." By collecting their scale-related positions, I was able to map a holistic, growth-aligned model of scale, as presented in the Growth Map of Open Education in Chapter 7. As a result, I agree with Charles that everything *can* scale differently *given the right conditions*. At the same time, however, my research suggests that the prevailing prescriptive patterns that surround open educators will not change on their own.

Among the open educators who participated in my research, there was a clear affinity for holistic growth models of scale, but they demonstrated little understanding of the mechanisms of such growth. In Chapter 5, for example, Kathleen, recognized patterns of subversion seen in open access publishing now taking place within open textbook publishing. She expressed dismay at seeing the same cycles repeatedly. Although she could not clearly articulate the mechanisms at play, she did "hold librarians, as a group, somewhat accountable." My research suggests that open educators need to hold themselves accountable for the repeating prescriptive patterns seen within open education efforts over the past 65 years. Moreover, they need to abandon the somewhat naïve assumption that simply by maintaining growth-aligned intentions, open educators can achieve outcomes different than those described in Chapter 3.

My research suggests that affecting meaningful change will, instead, require open educators to replace their scale-related silences with intentional and explicit conversations about the implications of scale, both big and small, and the mechanisms of scale, whether production or growth, within open educational spaces. As part of these conversations, open educators who aspire to create more holistic educational futures may need to offer clearly articulated scale-related positions, accept unpredictability and other growth-related uncertainties, and seek to minimize educational disasters. Below, I explore each of these ideas in more detail.

Offering clearly articulated scale-related positions. Throughout my research, it became clear that many open educators are working hard to create educational systems that support increased levels of learner and educator autonomy and customization. As one survey participant explained at the beginning of Chapter 6, open educators are a coalition of transformational people seeking to destabilize closed educational and publishing power structures. Charles further described the mindset that underlies much of this work:

Openness involves a generous mindset. It is about plenitude, abundance. We believe that

there is enough here for everybody. The relationship between what you put in and what

you get out is intangible, but that is the goal. Whereas in a typical capitalist economy, it is

the exact opposite, built on putting in as little as you can while extracting as much as

possible. It's a different model of thinking.

These thoughts offer rare insight into the scale-related beliefs of open educators. As seen throughout my

research, open educators have been tremendously reluctant to discuss matters of scale. I suggest there is

an urgent need for more critical conversation among open educators to explain *why, how,* and *for whom*

they seek to achieve scale. How many open educators share Charles's perspective? Of those who do,

how many can clearly articulate their position? I hope that the positional maps presented in Chapter 7

will serve as a starting point for more clearly articulating the scale-related positions taken among open

educators. I further suggest that more research and honest dialogue is required if open educators aspire

to enact transformational growth through open education.

    Accepting unpredictability and other growth-related uncertainties. As discussed throughout my

dissertation, my participants often expressed positions aligned with holistic, growth-aligned scale.

However, what is less clear is how well open educators understand the trade-offs associated with

growth. As seen in Chapter 7, scaling up is a decision-making process of continuously choosing what

matters most. Franklin (1999) emphasized the unpredictable nature of holistic growth; where growth is

possible, non-growth must also be accepted as a possibility. One can create conditions that support and

encourage growth, but it cannot be forced. Moreover, holistic growth is inefficient and unpredictable.

Choosing growth involves accepting these realities.

    Based on my research, some my research participants embraced this unpredictability and the

non-growth possibilities of "staying small." Among those more interested in achieving scale, it was less

clear how willing they would be to accept the trade-offs associated with holistic growth. One survey contributor noted, "Large networks of people can almost never stumble in step for long, so sometimes there's productive tension that shapes the big ideas, but more often, there are limitations of human difference and communication that cause harm and factionalism without even necessarily being productive." It is possible that this lack of awareness/willingness to accept these holistic growth-related realities is part of the reason that open educators are reluctant to clearly articulate their scale-related positions. As discussed above, more research and dialogue are required before open educators can clearly and consistently embrace the unpredictability and other growth-related uncertainties.

Seeking to minimize educational disasters. At the end of Chapter 7, in what might be considered shifting from a prescriptive to a holistic perspective, I reframed the question "What can we scale without losing?" to instead read, "What is essential that we retain?" Framed this way, this question is aligned with what might be considered a "disaster minimization" approach to open education (Franklin, 1999), an approach that my research participants who emphasized the importance of localization, customization and heterogeneity might support. In Chapter 5, for example, Charles explained how localization allows learners to take a problem set or theory and apply it in their own context, and Sara explained how open narrating practices allowed others to replicate interventions elsewhere. In Chapter 7, Kathleen emphasized the importance of heterogeneity as insurance against the concentration of software and platform ownership, and Tracy explained that "by creating [content] ourselves, we remain the keepers of our knowledge." They, therefore, consistently valued educational control firmly rooted among learners and educators in a way that aligns with a disaster minimization approach. Continuing to build open education according to such and approach might, therefore, lead open educators to ask (and perhaps seek to answer) the following question: "How do our open educational efforts ensure that learners and educators retain control of their educational futures?"

In Chapter 1, I described how learning to sew with my mother-in-law in the Western Arctic and an accidental encounter with the work of Ursula Franklin have influenced my work. Interestingly, Franklin (1999) cited another example of disaster minimization from the Western Arctic, Thomas Berger's inquiry into the Mackenzie Valley pipeline. The Berger inquiry involved a participatory and consultative planning process that resulted in a 10-year moratorium on oil and gas development and "resulted in a workable plan to proceed with development while minimizing potential harm" (p. 82). It gave the people living in the region time to gather local knowledge and settle their land claims. It ensured that the Western Arctic peoples retained control over their futures.

What, then, might a holistic, disaster-minimizing approach to open education look like? My research suggests that such an approach would consider not only the actions and intentions of open educators, but also those of the powerful, adjacent social worlds described in Chapter 5. It might advocate relational sharing systems that contextualize information in ways that give power back to learners and educators and the use of little, low-tech open education described in Chapter 3 (Christen, 2012). It might call for a moratorium on the adoption of big open education products and platforms. It might emphasize the slow, inefficient, and persistent work of open educators as presented in the growth-aligned Position F in Chapter 7. It might draw insight from the *Inuit Qaujimajatuqangit*'s holistic, dynamic, and cumulative approach to knowledge, teaching, and learning (Arnakak, 2001) described in Chapter 1. It would likely value people and long-term communal benefits over scale. Although the open educators who participated in my research tended to support achieving scale through holistic growth, it is unclear if these are the kinds of approaches that they imagine. Clearly approaches to open education that seek to minimize disaster requires far more attention.

Contributions to scale-related research. As discussed above, the open educators who participated in my research consistently aspired to create more holistic educational futures but often lacked the vocabulary to do so. My research is intended to help open educators, and educational researchers more broadly, to articulate their scale-related positions more clearly and to prompt more critical conversation about scale-related decisions and trade-offs.

Final Thoughts

More than five years ago, I began to critically consider the implications of scale within the field of open education. In that time, the trends described throughout my dissertation have continued to intensify. Words and terms like "big tech" and "massification" have become increasingly familiar. Big open education has become big business. In the past year, the MOOC providers Coursera and EdX have both become for-profit entities. Coursera's revenues are expected to reach $400 million in 2021. Increasingly, these MOOCs providers are relying on "non-university partners," including Facebook, to generate content delivered on standardized, data-gathering platforms built to control the learning experience. For a profit. These MOOCs look nothing like the initial connectivist, rhizome-inspired open, online courses that open educators imagined would provide free education for everyone everywhere just over a decade ago.

At the same time, open educators have increasingly distanced themselves from MOOCs, turning their attention first towards OER, then open textbooks, and now increasingly towards emerging areas of open educational research, including OEP and open policy. My research suggests that this distancing, however understandable it may be, is dangerous. Open educators' transformational aspirations imply a desire to enact change at scale. Unfortunately, in the absence of clearly articulated alternatives, emerging open educational initiatives seeking to transform education are likely to fall into the same predominant prescriptive patterns as their predecessors.

My research has involved mapping these current patterns of scale within open education

because, as noted by Franklin (1999), "the web of technology can indeed be woven differently" *if* we take the time to understand their origins and purposes of the current patterns (p. 52). Understanding the prevailing prescriptive patterns that surround and flow through a situation of open education and clearly articulating holistic growth as an alternative are small first steps towards such re-patterning. My research participants were initially reluctant to discuss the topic of scale, but when they did discuss it, they consistently complicated it often holding apparently contradictory positions simultaneously. At the same time, they demonstrated evidence of a tacit awareness of different approaches to scale that they struggled to articulate. As I had hoped my situational analysis-guided research design handled these challenges relatively well, and continuously suggested generative paths with which to proceed and, ultimately my research suggests that open education *can* be re-patterned in holistic ways more aligned with the holistic intentions of open educators.

As a result, I suggest that situational analysis's mapmaking techniques provide a level of "structured flexibility" that qualitative and critical educational researchers can use to weave together data gathered from research participants and other sources to tell complicated, yet coherent, stories of teaching and learning in truly post-structural ways, stories with the power to disrupt the equilibrium of current thought in order to make room for something otherwise.

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Appendix A

RECONSIDERING SCALE IN
OPEN EDUCATION

What are the opportunities and limitations associated working at various scales?

WHAT IS OPEN EDUCATION?

The meaning of "open education" continues to lack a consistent definition. For the purposes of this research, the definition is broad. It includes work involving the use of Open Education Resources (OER), Massive Open Online Courses (MOOCs), Open Educational Practices (OEP) and Open Pedagogy. It also includes novel, experimental, connected and digital pedagogy and learning across both formal and information educational settings.

Since COVID-19 disruptions, most educators and their students have experienced education that might be considered "open" in one way or another. I invite you to share those experiences, focusing on the implications of scale, both big and small, on the learning experience.

Credit: OE Consortium

BIG AND SMALL OPEN EDUCATIONAL ELEMENTS

FUNDING
Open education might be considered big or small within the context of its overall cost and who is funding the work.

TOOLS
Open education might be considered big or small because of the tools used, including who owns the tool (corporate, institution, open source, etc.) and who controls their configuration and data.

CONTROL
Open education might be considered big or small in terms of the extent to which learning standards and expectations are being defined by learners, instructors, institutions, governments, etc.

NUMBERS
Open education might be considered big or small in terms of enrollment, participant numbers or anything else that can be counted (network size, interactions, followers, etc.).

SIZE & COMPLEXITY
Open education might be considered big or small in terms of actual contribution size from very short stories and small media files to complete textbooks, courses and learning systems.

INTENTION
Open education might be considered big or small in terms of its desire to support/transform learning at the personal, class, community, national and/or global level.

OTHER
In what other ways might we consider open education in terms of scale? Please share your thoughts and ideas.

RESEARCH APPROACH & PURPOSE

Although this research asks you think in terms of open education as big and small, it is typically not a case of one or the other. Rather, you will be asked to consider one open education project with which you are familiar.

You will then be asked to describe elements that you consider as "big" and "small." In that one example, you might identify elements that are big, small and mid-sized.

SMALL   BIG

The purpose of this phase of the research is to generate ideas to more further explore. **There are no wrong answers**.

The information gathered in this phase of the research will be used to inform two a collaborative mapping process and semi-structured interviews with a small group. The methodology is informed by Adele Clark's Situational Analysis. For more information please see Reconsidering Scale in Open Education <link needed>.

Appendix B: Initial Messy Map

Appendix C: Social Worlds/ Arena Map of Open Education

Publishers

Scholastic

Proctorio

17zuoye

McGraw-Hill

EdTech
Companies

Byju

Pearson

LMSs &
Courseware

OpenStax

Coursera

VIP Kid

Elseiver

PressBooks

Zoom

Teachers, librarians & faculty

Google

Apple

Reclaim

WordPress

Twitter

Tech
Companies

Educational technologists

Open
Education

Amazon

Microsoft

Facebook

Hewlett

Foundations

Higher Ed

UNESCO

K-12

Educational
Institutions & Administrators

Governments & Orgs

Map Key

Arena

Social
World

Organization

Appendix D: Collaborative Messy Map of Scale in Open Education
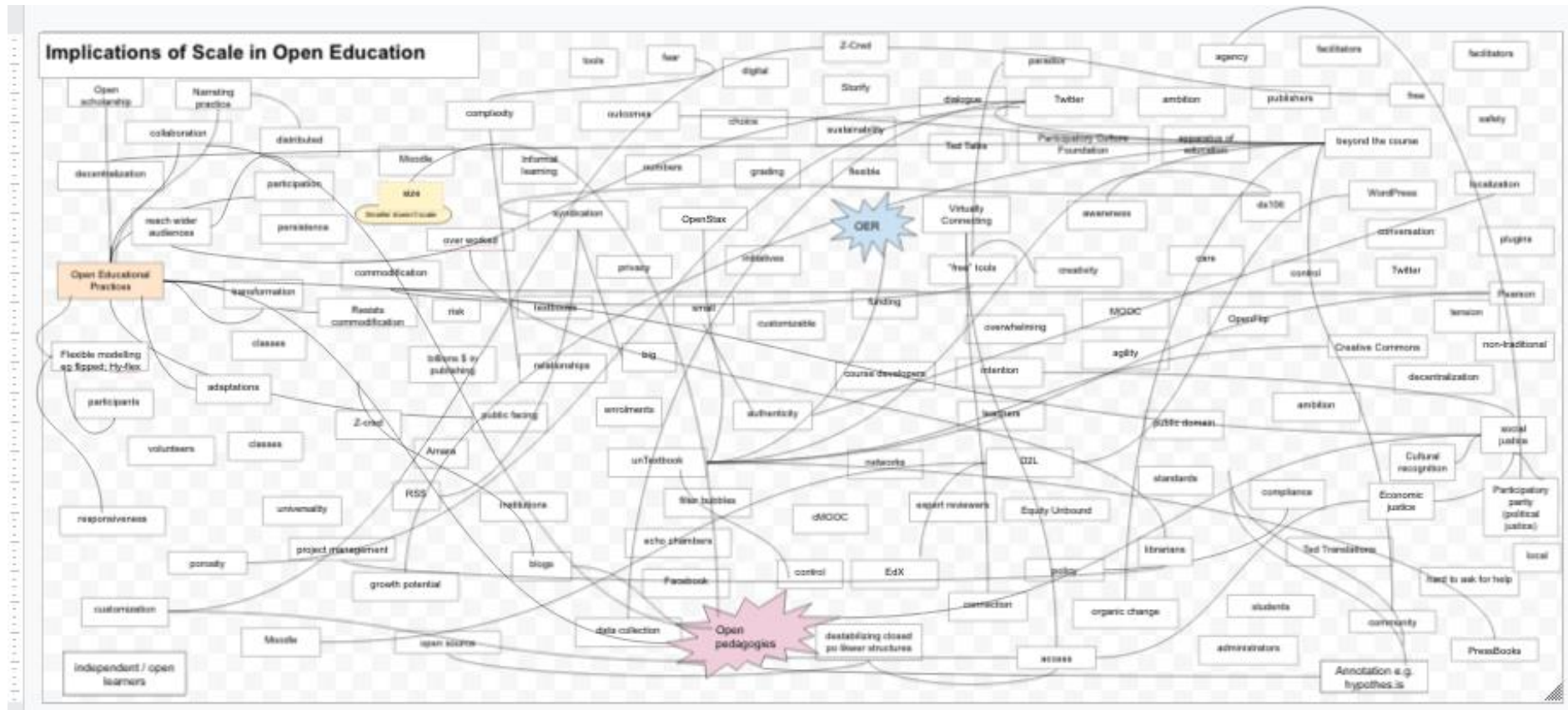
Appendix E: Relational Map of Scale in Open Education
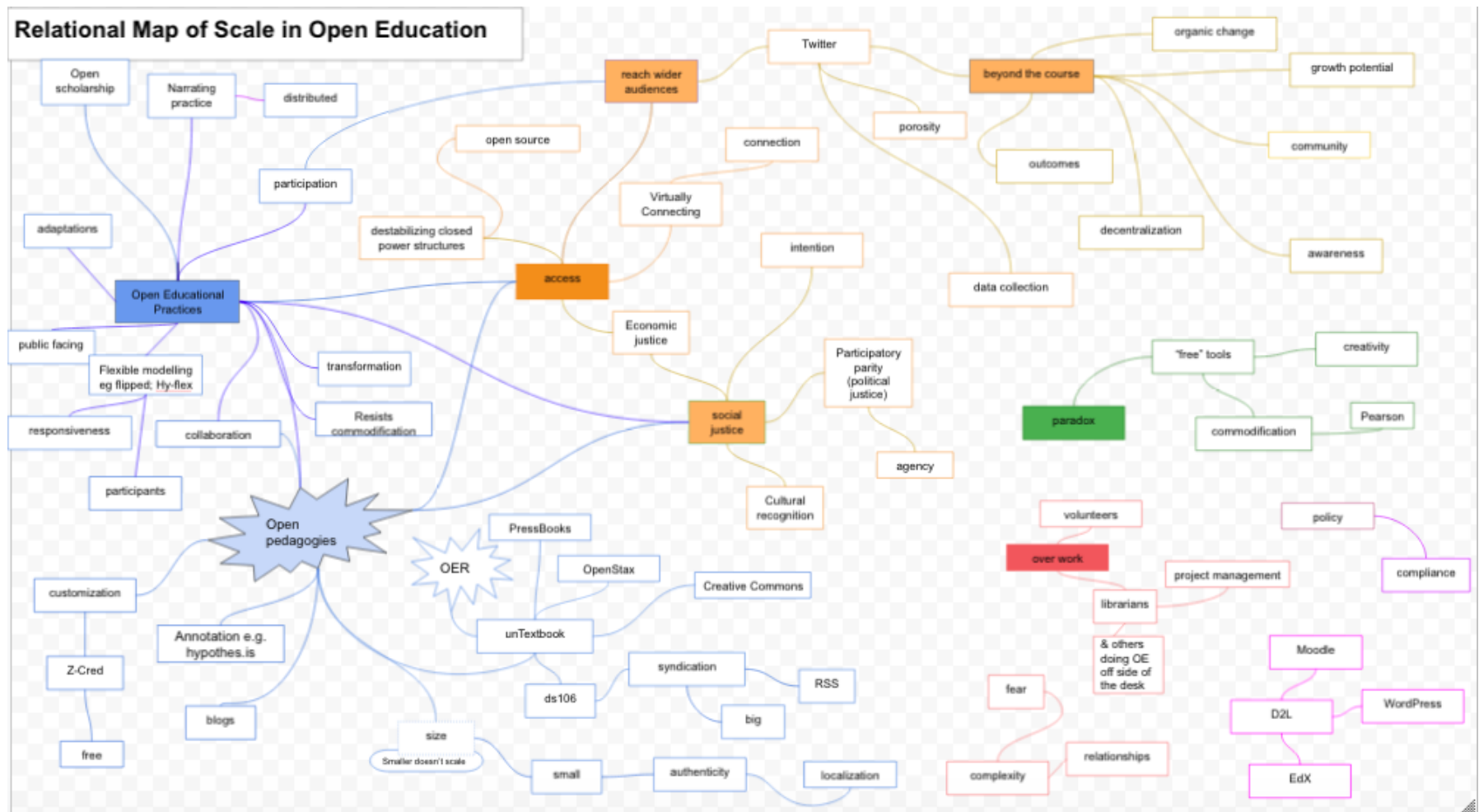
Appendix F: Production Positional Map of Open Education

Position G
Universal access to standardized learning.

Position F
Policy makers drive adoption through standardized institutionalization.

Position E
Success defined by economic viability (+ROI) by achieved through economies of scale.

Position D
Overwork is addressed by increasing efficiencies.

Position C
Collectives adopt community learning standards.

Position B
Current standardized learning practices are easy to scale using open tools.

Position A
Individual learners & educators can adopt/create any content, tools & practices they wish.

big

little

Scale of Learning Initiative

low

high

Standardization of Learning Content, Tools & Practices

Appendix G: Growth Model of Scale in Open Education

Scale of Learning Initiative (big / little) vs. Standardization of Learning Content, Tools & Practices (low / high)

Position G
Widespread access to localized & highly variable learning that allows for *further customization*

Position F
Policy makers are influenced by collective action to meet localized & contextual needs.

Position E
Success defined by the proliferation of content, tools and practices.

Position D
Overwork is addressed by increasing number of people.

Position C
Collectives adopt community learning standards.

Position B
Current standardized learning practices are easy to improve using open tools.

Position A
Individual learners & educators can adopt/create any content, tools & practices they wish.