Navigating Figured Worlds: Preservice Teachers’ Understandings of Disability and Inclusion Through Representations

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doctoral thesis

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Abstract

Preservice teachers’ understandings of inclusion and disability can significantly shape their practices; they need opportunities to consider their perspectives as part of their teacher training. Yet, teacher education programs seldom have explicit opportunities for such considerations. Using a design-based approach, I iteratively developed and implemented representation tasks within a Bachelor of Education course. I examined how representations in the form of drawings supported preservice teachers in developing their understanding of inclusion and disability. The data sources included individual and collaborative drawings, video recordings of participants creating drawings, and audio recorded interviews with participants after their field experiences. I conducted a visual discourse analysis of the representations and an interaction analysis of video recordings to examine how they understood figured worlds of inclusion and disability. Figured worlds encompass the socially negotiated actors, actions, and outcomes that are valued, and they characterize people’s orientations to daily life (Holland et al., 1998). The findings show how participants progressed through (1) developing an individual understanding, (2) a collaborative understanding, and (3) a situated understanding of inclusion and disability. Individually, the participants held multiple, sometimes simultaneous, conceptions of disability and inclusion. Further, social positions and hierarchies were often conveyed through the drawings. In participants’ collaborative drawings, forces such as instructor appeasement, time constraints, and individual priorities competed in influencing their representations. During field experiences, the participants navigated complexities of school cultures, other teachers, and students in considering ways to understand and implement inclusion. As well, the participants had to author themselves and their roles as emerging teachers within figured worlds of inclusion and disability. Implications from this research include a need to support preservice teachers in navigating
multiple figured worlds, the adoption of a critical disability studies lens in teacher education, and how representations can be used as a pedagogical tool. Furthermore, the research supports using representations as a methodological tool to studying figured worlds, proposes a framework to understand interactions, and offers connections between the fields of the Learning Sciences and Disability Studies.

Keywords: inclusion, disability, preservice teacher, representation, figured world
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Chapter 1: Introduction

Inclusion regarding disability is broadly supported by government and educational policies, students, and teachers themselves, but implementing inclusion remains a challenge. Part of the challenge is in how teacher education programs approach disability and prepare teachers to foster inclusion. Many education programs focus on diagnoses and prescriptive strategies to support students’ needs, but this is only part of the solution (Abernathy & Taylor, 2009).

I used a design-based research approach to examine how preservice teachers understood disability and inclusion and how their perspectives shaped practice. To support preservice teachers in considering their perspectives and the connections to practice, they engaged in a set of representation activities integrated within a teacher education course. In the activities, preservice teachers created representations (i.e., drawings), that reflected their understandings of disability and inclusion. Preservice teachers used the representations to engage in discussions with peers, to situate their understandings, and to consider diverse perspectives. I investigated how preservice teachers engaged in the representation activities and how they formed understandings of disability and inclusion.

Research Problem

As students and teachers move through everyday experiences, they negotiate, observe, and develop situated worldviews, meanings, and interpretations of education. How these perspectives intersect can be problematic for students with disabilities and diverse needs when considering power dynamics, stigmatization, and assumptions by teachers and peers about students’ abilities and ways of learning.

Many teachers lack confidence and feel their teacher education inadequately prepares them to support students’ needs (Gehrke & Cocchiarella, 2013). Regardless of policies and
mandates about inclusion (e.g., Alberta Education, n.d.), teachers’ perspectives set the tone of what counts as legitimate knowledge and legitimate learning experiences in real-world classrooms (Schön, 1995). Beyond convincing preservice teachers to be inclusive, supporting them to consider how their perspectives and their practices intersect is a key part of teacher education.

A systemic shift from segregated special education programs toward inclusive education has required teachers to take on more active and intentional roles in supporting and valuing diversity (Allday et al., 2013; Garriott et al., 2003). Preservice teachers typically have positive sentiments toward inclusion and supporting students with disabilities, but teacher training often focuses on policies and procedures without engaging preservice teachers’ assumptions and how they influence practice (Collins, 2013; Redmond & Lock, 2017). This dissertation explores how a set of representation activities can bring into contact the multiple aspects of inclusion and disability with preservice teachers’ perspectives.

Context of the Study

Many students with disabilities (including those who are disabled by society and the education system) grapple with low grades, social exclusion, stigma, anxiety, depression, and doubled odds of abandoning high school (D’Intino, 2017; Klassen et al., 2013; Ostrowski, 2016; Statistics Canada, 2015). With government pressure for inclusive, “flexible, and responsive learning environments that can adapt to the changing needs of learners,” (Alberta Education, n.d.) the government expects teachers to develop skills and expertise to support students with diverse needs. In Alberta, 25% of K-12 students have an individualized program plan or receive significant learning supports (Alberta Teachers’ Association, 2015). Yet only eight percent of teachers have reported feeling their teacher education prepares them to support students’ needs
(Alberta Teachers’ Association, 2014). In response, the Alberta Teachers’ Association (2014) has called for research into teacher education programs and their effectiveness in supporting inclusion.

Teacher education programs focused on diagnostic labels and prescriptive strategies to manage disabilities do little to engage teachers’ perspectives of disability and inclusion (Gilham & Tompkins, 2016). Consequently, teachers can struggle with effective inclusive practices. For example, some teachers offer extra time on exams because it follows the status quo, others segregate students with disabilities, and others yet make assumptions about students’ needs. These types of well-intended attempts were evident during my master’s research (Ostrowski, 2016) and my work as a teaching assistant and instructor.

An open discussion of the inseparable relationships between preservice teachers’ beliefs about learning, disabilities, and inclusion has been missing in teacher education. Teacher education programs that focus on formulaic support strategies, policies, and procedures neglect opportunities for preservice teachers to reflect on how their perspectives shape their practices (Alberta Education, n.d.; Collins, 2013; Redmond & Lock, 2017). Historically, within the course I studied, preservice teachers learned to develop individual program plans and were assessed on their ability to generate such documents and strategies to support student needs. I had been involved in the course as a teaching assistant and instructor for two years before this study and I noticed that by the end of the course we, as instructors, knew little about what the preservice teachers thought about inclusion and disability. Moreover, the preservice teachers did not have opportunities to explicitly connect their perspectives with the course content. Since attitudes and beliefs guide teaching practices (Silverman, 2007), preservice teachers need time and space to
discuss, interpret, and wrestle with their understanding of disability and inclusion before trying to design and implement inclusive practices with actual students.

**Purpose of the Study**

The purpose of my research was fourfold: first, to investigate how preservice teachers understood disability and inclusion; second, to create time and space for preservice teachers to engage their assumptions and perspectives through representations, and to use the representations as entry points into discussions about disabilities and inclusion; third, to study how preservice teachers socially negotiated collaborative representations of inclusion and disability; fourth, to better understand how preservice teachers socially negotiated their understandings of inclusion and disability in real-world contexts. The following overarching research question guided these goals: In what ways do preservice teachers understand inclusion and disability?

**Rationale for the Study**

Teacher education programs often promote inclusive ideals and simultaneously must teach how to navigate bureaucratic processes based on legacy perspectives (Connor et al., 2015; Kumar & Wideman, 2013). Many educators aspire to foster inclusion, but much of educational infrastructure remains anchored to historic approaches incompatible with future directions. How teacher education programs and preservice reconcile tensions between such opposing stances is unclear, or at least, currently unsuccessful in preparing teachers to support students’ needs (Alberta Education, n.d.; Collins, 2013; Redmond & Lock, 2017).

Current perspectives of disability and inclusion in western education straddle several, and sometimes conflicting, philosophical stances (Connor et al., 2015; Goodley, 2017; Winzer, 2014). At a high level, curricula and policies often advocate for wholistic inclusion where disability is valued and supported as part of the social fabric. At the same time, support structures
for students such as funding and resources are often tied to eligibility based on medical diagnoses, which are rooted in psychometrics and standardized cognitive models (Bateman, 2011). As an added challenge, teachers are often expected to include and support all students regardless of available funding and resources.

How preservice teachers understand disability and inclusion, how those perspectives formed, and how different perspectives interacted were central focuses of my research. Stemming from a sociocultural perspective (Vygotsky, 1938/1978), I employed what Holland et al. (1998) referred to as *figured worlds*, which are “socially and culturally constructed realm[s] of interpretation in which particular characters and actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others” (p. 52). Figured worlds help situate the perspectives and experiences preservice teachers drew upon concerning inclusion and disability.

I used external representations to better understand preservice teachers’ interpretations of figured worlds, how they were situated, and how different perspectives came into contact. Representations can act as tangible artifacts of preservice teachers’ understandings of figured worlds and give them currency to discuss and contemplate the perspectives of others. How different perspectives come together is an integral part of how preservice teachers learn and make sense of disability and inclusion. The shared and overlapping figured worlds that inform, and are informed by, learning processes emerge from interactions between people and their experiences (Stahl, 2006). Since teachers’ perspectives can significantly influence their practices (Silverman, 2007), a better understanding of preservice teachers’ figured worlds can inform teacher education programs and supports to reconcile tensions between preservice teachers’ perspectives and practices.
Significance of the Study

The significance of my research is threefold. First, there are discrepancies between the goals of teacher education programs to teach inclusion and how prepared in-service teachers feel in supporting students’ needs (Gehrke & Cocchiarella, 2013). This suggests preservice teachers struggle to form coherence across theoretical ideals, personal perspectives, and the pragmatic realities of implementation. Given the importance of context in learning, understanding the contexts preservice teachers arrive from was crucial in connecting course content to preservice teachers’ lives and their future careers.

Second, through creating, discussing, and refining external representations, my research shows the processes preservice teachers employed to form their perspectives. As well, the research shows how preservice teachers negotiated meanings, what influenced their ideas, and how they wrestled with different perspectives.

Third, attention to issues around inclusion and disability are still emergent within the field of the Learning Sciences (Lewis, 2017; Smagorinsky et al., 2017). My research contributes to learning sciences scholarship in understanding how representations of figured worlds form and how issues around inclusion and disability influence those processes.

Definitions of Terms

For this dissertation, I use the following definitions for key terms:

- **Disability**: A socially constructed label to indicate “the loss or limitation of opportunities to take part in” daily life in equitable ways “due to physical and social barriers” (Goodley, 2017, p. 9). Further, “biological differences don’t necessarily reduce one’s ability to navigate the physical and social worlds; only biological differences that are socially framed as disabilities do so.” (Smagorinsky et al., 2017, p. 70). I use this term for
consistency with disability discourses and scholarship acknowledging people may not self-identify as such. I also acknowledge some people explicitly self-identify as disabled for reasons such as advocacy and activism (Evans, 2019).

- **Figured world:** A “socially and culturally constructed realm of interpretation in which particular characters and actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others” (Holland et al., 1998, p. 52).

- **Inclusion:** Embracing human heterogeneity as a beneficial and fundamental part of teaching and learning (Rosebery et al., 2010). I use this term for consistency with the research context, acknowledging its historic limitations in perpetuating a power dynamic of “normal” persons integrating persons perceived as atypical into activities and environments (DePoy & Gilson, 2011).

- **Impairment:** A perceptible (but not necessarily externally visible) difference in a person’s cognitive, sensory, or physical functioning according to diagnostic criteria (Goodley, 2017).

- **Representations:** Physical artifacts, such as drawings or sketches, created by students that convey their ideas, perspectives, and represent figured worlds.

I note, disability and inclusion are imperfect terms, but I use them for consistency with Alberta Education and the course content of the research site. Further, the terms disability and disabled are common to scholarly discourse (e.g., disability studies), government policies, and advocacy efforts.

**Organization of the Dissertation**

In Chapter 1, I introduced the context, rationale, and research questions for the study. In Chapter 2, I overview the historical underpinnings of disability and inclusion that have led to
current perspectives and educational practices. I use the lens of sociocultural theory to ground the research and establish a theoretical framework to consider how preservice teachers represent figured worlds. I then outline the representation activities preservice teachers engaged in as part of the study. In Chapter 3, I introduce my research methodology and methods of data collection and analysis to respond to the research questions. In Chapter 4, I report on the findings based on the participants’ drawings, interactions, and field experiences. In Chapter 5, I situate the findings to broader scholarship and literature. In Chapter 6, I propose implications for practice, scholarship, and future directions for research.
Chapter 2: Literature Review

In this chapter, I discuss the historical underpinnings of disability and how it has shaped current manifestations of the figured worlds of disability and inclusion. I ground my research in sociocultural theory (Vygotsky, 1938/1978) and relevant scholarship on disability and education. I then outline the theoretical framework underpinning the representation activities the participants engaged in.

Histories of Figured Worlds of Disability

If learning is taken as a social experience, any efforts to make teaching and learning inclusive warrants an appreciation for the historical trajectory that underpins current discourses about disability. Why discuss history? Teaching and learning are not bound to individuals. They live across people, places, and time. They simultaneously have hooks in the past while negotiating the present and considering the future. I believe it is useful to understand which hooks are brought forward and which are left behind to shape current and future experiences. I position this overview as figured worlds (Holland et al., 1998) of disability to trace the evolution of what actors, actions, and outcomes were socially recognized and valued over time.

Before the 19th century, disability was unrecognized or attributed to spiritual and moral forces (DePoy & Gilson, 2011; Winzer, 2009); impairment caused by a heroic act, such as in war, was an exception. In either case, disability was not an educational concern. People rejected disability for fear of it being contagious or a burden on society. Although misguided relative to contemporary perspectives, society believed biological impairment could hinder the greater good and the health of others (DePoy & Gilson, 2011). During this period, cognitive disabilities remained in the realm of medical institutions (i.e., asylums) which prioritized containment over education (Winzer, 2014).
The 19th century saw glimmers of respite for people with disabilities. Specialized schools were built for students with severe sensory disabilities to receive basic supports and rehabilitation toward a goal of “normative” function and performance, as well as a parallel goal to “[protect] society from those with disabilities” (Winzer, 2009, p. 7). Modelled after earlier efforts in Europe, North American specialized schools for students with visual impairments and the hard of hearing served to train students to contribute to industrial society and to promote the “spiritual redemption” (Winzer, 2009, p. 9) and “moral development” (p. 18) of people with disabilities. Schooling for students with cognitive disabilities also took this approach once it became recognized as a distinct category of disability. This rudimentary support was still grim but a monumental shift toward attributing some value to those with disabilities. Unfortunately, economics drove this valuation to develop skilled workers for trades, factories, heavy labour, and undesirable jobs while also maintaining the marginalization of people with disabilities (Winzer, 2009).

The boon of psychology emerged in the early 20th century and the advent of mental ability testing played a major role in the development of special education (Winzer, 2009). Special education in North America during this time “emerged at the convergence of extraordinary economic expansion that was accompanied by a heady mix of rapid industrialization, unstoppable urbanization, and massive—historically unprecedented—immigration” (Gerber, 2011, p. 4). With the growth of education psychology came psychometric assessment instruments, which school districts adopted and perceived as consistent and efficient ways to assess student abilities (Winzer, 2009). The proliferation of psychometric tests led to elaborate schemes to sort and sift human intelligence in quantifiable ways (Thomas, 2014). These assessments were used to identify students with disabilities and segregate them into
special classes. By the 1950s, legislation in the United States and Canada formalized special education as a mechanism to allocate funds and resources to support the needs of students with disabilities (Gerber, 2011; Winzer, 2009).

**1960s to 1970s**

The tide began to shift on the coattails of the 1960s civil rights movements (DePoy & Gilson, 2011; Winzer, 2009). National disability advocacy groups formed and gained momentum in lobbying for better treatment and support throughout Canada and the United States. Reformers marched for equal rights and opportunities, and they criticized the education system for disadvantaging and disabling students.

By the 1970s, activists fiercely opposed psychometric labelling practices, arguing the practices were discriminatory and led to negative stereotypes (Goodley, 2017; Winzer, 2009). A medical diagnosis brings along with it sociocultural baggage. Standardized profiles used to characterize a disorder are useful for diagnosis and developing support strategies, but such profiles can become problematic beyond a clinical setting. All too often, others overlay a person’s identity with a stereotypical persona, which can significantly alter their sociocultural experiences (Holland et al., 1998). The danger is when a diagnosis overshadows a person’s desires, personality, potential, and sense of self. As Holland et al. (1998) noted, people with disabilities are often fully aware of the deficit-oriented personae imposed upon them. Disability identities have also played a strong role in how, why, and when people disclose their disabilities, such as in activism efforts, advocacy for supports, and to convey how disability is embedded in a person’s lived experiences (Evans, 2019).

National reports, such as *One Million Children: The CELDIC Report* (Commission on Emotional and Learning Disorders in Children, 1970), pressured governments and educational
institutions to make education a right for all children and to “properly address their educational and emotional needs” (Andrews & Lupart, 2000, p. 35). The number of specialized schools was reduced as students with disabilities were increasingly integrated into mainstream classrooms. Canadian universities also began offering teacher education courses and programs to meet the growing demand for “special education” expertise in schools.

In Canada, for a student to receive funding and resources to support their needs they had to successfully navigate what Andrews and Lupart (2000) called, the five-box special education approach:

1. **Referral**: A student was referred to a psychologist by a teacher, parent, or medical professional
2. **Testing**: The student underwent a psychoeducational assessment
3. **Labelling**: The student was diagnosed based on standardized criteria
4. **Placement**: The student was placed in a special school or classes
5. **Programming**: The student received an individualized program plan with supports and accommodations

A teacher would recommend a student for psychoeducational assessment for diagnosis and suggestions for support strategies. The teacher worked with parents, and sometimes the student, to develop an individualized education/program plan which would outline the student’s strengths, weaknesses, and academic accommodations to support them (Bateman, 2011). These plans were used throughout a student’s K-12 education and were passed along from year to year.

These processes, along with individualized education plans, have been criticized for being reductionist in oversimplifying people into a set of labels and performance metrics (Goddard, 1997). Bureaucratic processes made this system time consuming and costly.
(Jahnukainen, 2011; Ostrowski, 2016). From referral to receiving supports, this process could take months or years if there was a backlog of students waiting for assessment. Moreover, there have been inconsistencies and demographic biases in diagnostic, resource allocation, and placement processes, leaving some students without supports (Jahnukainen, 2011; Rubenstein et al., 2018). With the high costs of assessments (Jahnukainen, 2011), in some cases, school districts could only afford a limited number of assessments each year and prioritized the most severe cases (M.-W. Chu, personal communication, January, 2019).

1980s to 1990s

Mainstreaming in the 1980s reflected broader, emerging beliefs that social interaction was integral in learning. However, mainstreaming was superficial. Inclusion was often only in the geographic and temporal sense (i.e., the same classroom and the same time as peers).

In 1990, the United States Congress passed the Americans With Disabilities Act, which prohibited discrimination based on disability. This mandated educational institutions (along with public and private facilities) to comply with accessibility guidelines and accommodate people with disabilities. In Canada, disability falls within the Canadian Human Rights Act (1985) and each province and territory legislates their own accommodation policies. These two statutes put disability in the spotlight within the United States and Canada and sparked a paradigm shift from a dual (special and regular) education toward a unified education system. By the 1990s, many special education schools closed (Winzer, 2014), and only a handful are open today, such as the W. Ross Macdonald School for the Blind in Ontario, the Alberta School for the Deaf, and select private schools (e.g., Calgary Academy).

The 1990s rendition of inclusion had a significant flaw: supporting infrastructure was still tied to standardized labelling practices and bureaucratic processes (Florian, 2019; Jahnukainen,
Inclusion cost money and government funding agencies argued resources were limited. The five-box approach gave a structured way to assess, categorize, and develop support plans for students. With integration into mainstream classrooms, the fourth step (placement) shifted from sending students to special schools to having special education teachers, individual aides, and resource rooms within mainstream schools (Winzer, 2009).

Greater awareness and acceptance of disabilities also increased the number of students being assessed and diagnosed, which strained an already flawed system. Moreover, teachers and professionals referred students to the same time-intensive and costly diagnostic process regardless of the type or severity of students’ needs (Jahnukainen, 2011). On the one hand, funding agencies wanted to limit funding for resources and accommodations to those students with a formal diagnosis. On the other hand, the five-box process was expensive and slow, and it could leave students’ needs in limbo. Another challenge of the five-box model was the assumption teachers had the training and resources to implement individualized programming for students with diagnoses while juggling the rest of their teaching duties and other students’ needs.

A major flaw of special education approaches based on the medical model of disability was that they blamed the student (Kauffman & Hallahan, 2011). The student, rather than the education system, was seen as deficient (DePoy & Gilson, 2011; Titchkosky, 2020). Despite the multiple caveats, by the late 1990s, educators were slowly embracing diversity in students as a positive contribution to learning for all students (Goodley, 2017; Winzer, 2014).

**2000s to Present**

The turn of the century brought with it widespread access to consumer electronics, the internet, and digital technologies. Students with disabilities benefited from improved and less expensive assistive technologies (D’Andrea, 2012). Mainstream tools such as an electronic spell-
checker could benefit both a student with dyslexia and a student without. The digital age rapidly afforded new ways for all students to engage in learning, collaborate within and beyond classrooms, access information from around the world, and personalize their learning experiences.

This trend continues today. The explosion of smartphone and tablet devices means more people now have access to technologies such as a voice assistant and dictation software previously only available in expensive, specialized devices. Many more students now have the agency and technology to initiate aspects of inclusion of disability on their own terms, without having to jump through bureaucratic hoops (Jahnukainen, 2011). Mainstream technology is not a panacea for learning, nor does it address all student needs, but it has helped make learning materials and devices more accessible while the education system grapples with how to implement inclusion in earnest (Jahnukainen, 2011). As Mergler et al. (2016) noted, even as inclusive education policies have come into effect, it can take “schools many years to fully implement policy directives, and it can take even longer for teacher, student and community attitudes to change” (p. 33). Students requiring assistive technologies have also flocked to mainstream devices with baked-in accessibility features because they reduce the social stigma of specialized devices (Irvine et al., 2014; Ostrowski, 2016). However, while technology has made strides in improving functional accessibility, it does not necessarily address, and can create additional, social and societal barriers (Alper & Goggin, 2017). As technology has become increasingly integrated in all aspects of life, it has also become essential to participation in modern society, so students without social or economic access to technology can now face a new vector for marginalization.
Simultaneously, assessment and diagnosis of disability remain commonplace in determining eligibility and allocation of funds and resources to support student needs (Frey, 2019). Current Alberta Education (2004) standards for special education require school boards to use diagnostic assessments to develop individualized program plans which inform what supports and resources are made available to students. Postsecondary institutions also often ask students to prove eligibility for supports with diagnostic documentation (Ostrowski, 2016; Reed & Curtis, 2012). Further, dedicated schools for “severe cognitive disabilities and/or complex learning, medical, emotional, sensory or behavioural needs” (Calgary Board of Education, n.d.), such as the Christine Meikle school, are still being built. Similarly, the presence of private schools, like the Calgary Academy, suggests parents and guardians believe such schools can provide better learning opportunities for students with disabilities compared to public schools. These types of policies and schools exemplify the ongoing tensions between the ideals of inclusion and day-to-day realities.

The innate desire for equitable social participation shows how learning is a relational process that intertwines biological characteristics and social experiences. In an equitable and accessible learning environment, learning rather than disabilities are at the forefront. As Vygotsky (1993) argued, and I found (Ostrowski, 2016), students in inclusive environments and who receive positive support can employ tools and strategies to have meaningful learning experiences. At the same time, even students with positive support from family and friends can encounter delays and points of friction going through the five-box process (Ostrowski, 2016). Additionally, the supports students receive often focus on individual needs and learning rather than supporting fuller social participation and learning (Reed & Curtis, 2012). In other words, support for sociocultural aspects of learning often comes from peers, family, and occasionally
teachers, while formal supports target academic performance and conformance to existing teaching practices.

**Models of Disability**

Scholarship into disability has formalized in recent decades as the field of Disability Studies, which captures the past and present theorizations and realities of disability. Disability Studies originated as a response to conceptualizations of disability as moral and/or medical conditions (Goodley, 2017), and more broadly “the structural, economic, and cultural exclusion of people with sensory, physical, and cognitive impairment” (Goodley, 2013, p. 631). The response to these was namely the social model of disability, in which society and the education system was problematized rather than individuals. Critical Disability Studies extends this response to go beyond and critique the social model (Goodley, 2017). Garland-Thomson (2013) added that the field of “[C]ritical [D]isability [S]tudies attends to how the discrepancies between actual bodies and expected bodies are characterized within particular cultural contexts” (p. 917).

Within Disability Studies, Goodley (2017) described four overarching models of disability: social, minority, cultural, and relational. The social model is “classic counter-hegemony: an alternative idea to the medical/individual tragedy that serves the aims of paramedical professionals” (p. 11). It distinguished impairment and disability with the former being about functional limitations of the individual and disability being socially created barriers to participation in daily life. The minority model approaches disability as a civil rights concern “influenced by the American [B]lack civil rights and gay, lesbian and trans politics of the 1960s and 1970s” (p. 13). The minority model challenged ableism and championed more humanistic practices such as using people-first language (i.e., people with disabilities).
The cultural model connects the social and minority models to consider “the work done by disability to culture and the work done by culture to disability” (Goodley, 2017, p. 15). Goodley noted that many scholars of this model view a disabled person’s body and culture as intertwined and reject firm separations between impairment and disability. The relational model approaches disability as “a person-environment mis/match,” (p. 17) where disability is situational, contextual, and relative but with less emphasis on disability as a social movement.

Aligning with the cultural model, explanatory legitimacy theory defines “disability as a human phenomenon comprised of the three interactive elements: description, explanation, and legitimacy” (DePoy & Gilson, 2011, p. 5). I use this theory to tease apart the connections between these elements to describe how disability and inclusion are conceptualized, enacted, and valued in daily life. The descriptive element identifies what people do, experience, and appear as (DePoy & Gilson, 2011). This can be articulated in ways such as in expectations of human development in relation to time and age, categories (e.g., students with autism), systems, and culture. Descriptions include observable, outward appearances and perceptions of others, as well as personal experiences of phenomena (Aust, 2018). As well, descriptions can be in terms of interior or exterior environments, with the former attending to biological characteristics of function or performance with the latter attending to behaviours and responses to external stimuli.

DePoy and Gilson (2004, 2011) built on these in the explanation element as the why of the descriptive elements. For instance, someone may communicate via sign language because they are hard of hearing or someone may use a specific table to accommodate their wheelchair. Explanations can also be cultural and systemic, such as someone participating in the Paralympic rather than Olympic Games because they use a prosthesis. In terms of environmental explanations of disability, the interior environment is focused on the body; “its conditions,
structures, and functions; and how the body is causal of human description” (DePoy & Gilson, 2011, p. 79). The interior environment orientation is associated with the medical model of disability and measurements of the body and its performance to explain disability relative to normative standards. Accommodation corresponds to the exterior environment, where the goal is to bring those measurements and performance closer to normative standards through adaptation to the external environment and structures.

The third element, legitimacy, describes how people gain or are ascribed the status of disability through values, categorical associations and memberships, social hierarchies, and interfaces between body and the environment. Accommodations, as typically conceived in contemporary education, position disability in terms of environmental legitimacy (DePoy & Gilson, 2011). Diagnostic metrics are used to legitimize a disability and justify accommodations. Moreover, “legitimacy determination is the extent to which the deviance [from a normative standard] is under one’s control or perceived to be involuntary” (p. 151). DePoy and Gilson argued the more control or choice a person has over their “deviation” from a normative standard, the less “legitimate” their disability is as perceived by others. This legitimacy also has pragmatic consequences, as a person is often required to provide external validation and diagnosis to claim eligibility to receive accommodations or supports (Bateman, 2011; DePoy & Gilson, 2011). Thus, perpetuating a need for dual identities as being perceived as “disabled enough” to warrant supports (Lightman et al., 2009) but “normal enough” to participate and interact with peers using supports in dominant ways.

These models of disability provide a useful backdrop to consider the findings of my research, which I take up further in Chapter 5. They help make connections between the research findings and broader discourses of disability studies.
In inclusive education, there is a provincially stated vision of inclusion (Alberta Education, n.d.), but a comprehensive training and implementation plan has been lacking (Alberta Teachers’ Association, 2014). There is a disconnect between what Alberta Education advocates and the underlying support structures. Alberta Education (n.d.) issued guidelines, resources, and principles of inclusive education, using language such as:

- “An attitude and approach that embraces diversity”
- “Equal opportunities for all learners”
- “A sense of belonging for all learners”
- “Remove barriers”
- “Understand and respond to the strengths and needs of individual learners”

However, the *Alberta Standard for Special Education* (Alberta Education, 2004) which outlines the policies and processes for funding and support processes remains shackled to traditional methods to diagnose students and allocate resources “through a formula” (Alberta Education, n.d.).

In my research on students with visual impairments (Ostrowski, 2016) and experiences working with students with disabilities, negative assumptions about disabilities were a common barrier students face in having their needs met and being valued as contributors to learning. Similarly, as a teaching assistant and instructor, I observed preservice teachers often focused on cursory aspects of disability, such as diagnoses and support strategies instead of deeper epistemological perspectives, which caused them to struggle with articulating and operationalizing their interpretation of inclusive education. If preservice teachers are expected to design inclusive learning environments and experiences, they need opportunities to articulate,
negotiate, and refine their notion of disability. It is not enough to approach inclusion based on medical labels of disabilities and performance metrics.

Inclusion means embracing the distinct ways of knowing, interpreting, and participating in the world that students with disabilities may have (Lewis, 2017). As Seelman et al. (2008) discussed, much of accommodations and assistive technology are localized at the body level and the “interfaces between the body and the environment” (p. 40). Working at the body level means to address the specific needs of a person through adaptations to an existing environment. Conversely, universal design approaches address accessibility at the system level to proactively include a wide range of students and needs (Meyer et al., 2014). Traditional discussions of disability have often adhered to the former in providing individual supports and accommodations without changing the classroom environment itself.

Following a formulaic approach to supporting students excludes unique ways of learning and knowing. “Inclusion is not primarily a special education, or even an education, issue. It is a fundamental way of seeing and responding to the human difference for the benefit of everyone involved” (Lawrence-Brown & Sapon-Shevin, 2014, p. 4). At a broad level, “students want to be valued and respected and they want to be a part of a school community where they feel like they belong and can make a contribution” (Carrington et al., 2007, p. 12). Diverse perspectives should be supported with diverse ways to communicate, engage, and express learning. “Heterogeneity [is] fundamental to learning” (Rosebery et al., 2010, p. 322). Heterogeneity is the unique ways people view, sense, interpret, represent, and evaluate the world. In their work, Rosebery et al. (2010) analyzed the discourses of third and fourth graders learning the second law of thermodynamics. The socio-economic and cultural backgrounds of the 21 students varied considerably. For several students, English was not their first language and 12 received free or
reduced-cost lunches. Unlike traditional approaches where a teacher would lecture about scientific theories of heat transfer and students would rehearse sanctioned terminology and scientific practices, the teacher deliberately engaged students’ diverse perspectives and experiences. The research team and teacher structured the activities to broaden discourse spaces, engage all students, and guide students to probe scientific ideas and how they relate to their everyday understandings.

Over several months, students inquired into their everyday experiences of heat and temperature, where crucially, the students led discussions, posed questions, and could suggest avenues for testing their ideas. For example, after a fire drill in cold weather, the teacher asked why people wore coats; one student described that the coat “traps the warmness” (Rosebery et al., 2010, p. 335). Careful not to snuff out incorrect ideas or improper terminology use (relative to disciplinary canon), the teacher gave probing questions to “bring into contact students’ diverse meaning-making practices and the big ideas and practices of the discipline under study” (Rosebery et al., 2010, p. 327). Through free-flowing discussions, students often referenced experiences from outside of school and topics from other subject areas to generate productive understandings about heat. Leveraging students’ diverse ways of articulation and inquiry into heat was powerful in fostering deep engagement, learning, and relevance to students’ lives. Facilitating productive discussion requires an awareness of how ideas diverge and converge and of how the inclusion or exclusion of perspectives shapes joint meaning-making (Philip et al., 2018).

I believe heterogeneity is equally useful in preservice teacher education about disability and inclusion. As Jordan et al. (2009) discussed, teachers’ beliefs, assumptions, attitudes, and epistemological perspectives can significantly shape how they take up inclusion in their
practices. Without relating to, and engaging preservice teachers’ perspectives, they are unlikely to enact the inclusive practices education programs attempt to instil (White, 2000). For teacher education to mean something, preservice teachers need to make it their own (Stuart & Thurlow, 2000). Preservice teachers need opportunities to make tacit beliefs explicit, reflect on their assumptions, situate their ideas among peers and coursework, and engage in productive discourses (Jordan et al., 2009; Robertson et al., 2017).

**Teacher Education and Teachers’ Perspectives of Disability and Inclusion**

Within the last three decades, educators have stepped toward a fuller sense of inclusion beyond simply having students with disabilities in the same classes at the same times as their peers (Goodley, 2017; Winzer, 2009). Preservice (and in-service) teachers have adopted more positive attitudes of inclusion and disability but have also expressed concerns with implementing inclusive practices because of inadequate policies, funding, resources, and leadership (Burke & Sutherland, 2004; Markova et al., 2016; Mergler et al., 2016, Savolainen et al., 2012).

Savolainen et al. (2012) studied the attitudes and self-efficacy in implementing inclusive practices of primary and secondary teachers in South Africa and Finland. The researchers administered a questionnaire (N = 1141) that combined the Sentiments, Attitudes, and Concerns about Inclusive Education scale (Loreman & Earle, 2007) and the Teacher Efficacy for Inclusive Practices scale (Forlin et al., 2010). Interestingly, while teachers held positive sentiments toward interacting with children with disabilities in a general sense, teachers also expressed concern about including such students within their class in terms of workload, stress, knowledge, and skills. Further, Finnish teachers expressed this concern significantly more than South African teachers. The results also showed South African teachers had higher self-efficacy beliefs in managing behaviour, whereas Finnish teachers had higher self-efficacy in collaboration. The
authors speculated this was related to a stronger emphasis on behaviour management in South African teacher education. This suggests even though teachers in both contexts shared positive sentiment toward inclusion and disability, they differed in how inclusion should be taken up in practice.

Teacher education programs can significantly influence preservice teachers’ attitudes toward inclusion and disability (Burke & Sutherland, 2004; Sokal & Sharma, 2014). Burke and Sutherland surveyed 60 preservice and in-service teachers in New York to determine how their prior experiences with and knowledge of disabilities affected their attitudes toward inclusion. The results showed that compared to in-service teachers, preservice teachers reported stronger background knowledge of disabilities, a stronger belief that inclusion is beneficial for students, feeling more prepared by their teacher training to support students with disabilities, a greater willingness to use inclusive practices, and a stronger belief to include all students in the same class. The authors argued teacher education mattered in supporting positive attitudes toward inclusion. They also emphasized that teachers need supportive principals and administration to implement inclusive practices successfully. Similarly, Loreman and Earle (2007) argued positive attitudes were crucial for inclusion to succeed and fostering such positive attitudes during their teacher education was preferred as attempting to change negative attitudes after preservice teachers graduated could be difficult.

Teachers’ beliefs and perspectives of the world shape what they prioritize, care about, and in turn practice in their classrooms (Jordan & Stanovich, 2003; Silverman, 2007). Jordan and Stanovich (2003) examined a series of studies where elementary teachers were interviewed about their instructional practices of students with and without disabilities to better understand how teachers’ epistemological beliefs related to their decisions and actions. The researchers scored
the interview transcripts to categorize beliefs as being pathognomonic or interventionist. The teachers with pathognomonic beliefs associated disabilities as internal to the student and that specialists should support the student instead of the teacher. In contrast, interventionist beliefs positioned the teacher as responsible for all students and meeting their needs. Jordan and Stanovich (2003) found teachers with interventionist perspectives interacted more with students and focused on supporting learning by asking probing questions, addressing misunderstandings, and encouraging higher order thinking. Conversely, teachers with pathognomonic perspectives focused on behaviour management. In addition, Jordan and Stanovich (2003) noted a school’s cultural norms could also contribute to teachers’ beliefs and practices. They argued the collective alignment in belief structures across teachers, resource teachers, students, and school leaders influenced individual teachers but also set a standard for how students were treated throughout a school.

As teacher education programs integrate inclusion as part of teacher training, they must contend with the historic residues of how teacher educators understand the notion of inclusion itself. In studying a professional development program for teacher educators in Scotland, Florian (2012) found some teacher educators associated inclusive education with special needs and that “inclusive practice’ was viewed as the domain … of staff who had specialist knowledge” (p. 280). This framing positioned inclusive practices as something different or additional to teaching practices for students without disabilities. To get around this perception, Florian found that by reframing inclusion as an extension of existing practices and pedagogy rather than something separate, “teacher education colleagues [could] link their own understandings and practices to the idea of inclusion, rather than learn something new that was unconnected to their own prior experience” (p. 281). As well, by connecting inclusion to teacher educators’ existing
understanding, differing perspectives and practices could become spaces of discussion and opportunity rather than divide and tension. This also helped shift inclusion toward being an integral part of education rather than an add-on.

In later work, Florian (2014) drew upon a series of teacher education studies to develop an inclusive pedagogy framework: “an approach to teaching and learning that supports teachers to respond to individual differences between learners but avoids the marginalisation that can occur when some students are treated differently” (p. 289). The framework is based on three assumptions: difference is part of the human condition and learning potential should be open-ended rather than deterministic, teachers must believe they can teach all children and students’ difficulties should be considered teaching dilemmas instead of student problems, and teachers should continually develop and evolve their teaching to support all students. This general sentiment of openness to teaching and supporting all students may seem intuitive, but it is not necessarily common.

Systemic and cultural shifts away from deficit and medical models of disability can be challenging and slow. For example, in 2004, Singapore made major policy changes toward an integrated rather than segregated education system, but even years later, Thaver and Lim (2014) found resistance and hesitation among preservice teachers in supporting an inclusive education system. The authors noted that while preservice teachers may support the concept of inclusion, they “still felt that students with disabilities were best educated in special schools” (p. 1047). Thaver and Lim associated this belief with the preservice teachers’ perceived lack of competency in supporting students with disabilities and “few or no encounters with people with disabilities and little or no knowledge of special schools” (p. 1047). They argued it was imperative teacher education programs support preservice teachers to become more knowledgeable and aware of
disabilities, and crucially, to have preservice teachers actively confront “their discomfort, misconceptions and attitudes about disability and inclusion” (p. 1049).

Confronting discomfort and misconceptions is also key in mitigating superficial engagement with disability and diversity more broadly. Educators should be wary of tokenistic practices like “culture day[s]” or “related celebrations” of diversity on special days because they are often “little more than an add-on to an unchanged school culture and curriculum” (Reygan et al., 2018, p. 2). Such practices can perpetuate the positioning of disability and diversity as being separate and distinct from the dominant group. Walton (2016) argued inclusion is not achieved through assimilation, where supports are offered to meet expectations of the dominant order, but through the “radical reconstruction of schools and schooling” (p. 54). Mere celebrations of diversity can sidestep preservice teachers from engaging in “critically self-reflective work” to develop “awareness of the structural inequities in the social order of schooling” and contribute to “collective action to dismantle institutionalised ableism” (Broderick & Lalvani, 2017, p. 902). To engage in such work, Reygan et al. (2018) advocated that preservice teachers should develop critical diversity literacy and form “a critical consciousness around oppression that propels teachers to take action for change” (p. 11). However, this is also in tension with the fact that preservice teachers also “need to find employment and work productively within the very system that they expected to critique” (Walton & Rusznyak, 2017, p. 8).

Part of a preservice teacher’s hesitation or uncertainty toward inclusion may also stem from a “fear of the unknown” (Dharan, 2015, p. 79). Studies have shown that attitudes toward disability and inclusion are more positive among educators who have worked with students with disabilities and have been able to develop confidence in supporting them (Forlin & Loreman, 2014). In addition to historic practices of segregation, perceptions of disability have been un-
helped by portrayals of disability as unnatural, dangerous, contagious, or comedic in popular culture (Connor, 2015). How teacher educators discuss, approach, and convey notions of disability and inclusion should not remain unquestioned. Rather, “it is critical that the profession is seen as a collective community of critical inquirers” (Dharan, 2015, p. 87) that continually works to dismantle inequities and support the learning of all students. Addressing the details of how preservice teachers understand inclusion both as a concept and as a practice within their teacher education is key to prepare them for supporting students with diverse needs.

**Sociocultural Theory and Education**

Key to sociocultural theory is learning as dialogic interactions between people, cultural and historical contexts, environments, tools, and artifacts (de Valenzuela, 2014; Vygotsky, 1938/1978). Vygotsky (1938/1978) argued mediation through psychological tools was a fundamental part of cognitive development, where “mediation occurs when an artifact is drawn in to a situation to alter the relationship between people and the world around them” (Esmonde, 2017, p. 8). Similarly, social structures also mediate people’s experiences and learning. Lave and Wenger (1991) discussed apprenticing tailors gradually increasing their participation and mastery of the craft but being acknowledged as a master was a social construct. This social structure mediated a specific trajectory toward a predetermined set of competencies and skills, much like a common education curriculum. How such social structures are formed and interpreted delimits who can participate and how participation is socially recognized (e.g., novice versus expert, typical versus atypical). In schools, teachers similarly shape the social structures of their classes in terms of what counts as learning and inclusion. Historically, social structures have often ignored or snuffed out opportunities for the participation and social recognition of students with disabilities (Winzer, 2009, 2014).
Traditional instruction for students with disabilities focused on automaticity, remedial, and low-level skill development (Winzer, 2014). In contrast, Vygotsky (1993) emphasized social relationships and interactions as critical to learning. For students with disabilities, social context drives learning and participation in daily life: “The development path for a … child lies through relationships and collaborative activity, with other humans” (Vygotsky, 1993, p. 218). In this view, disability is a social issue that requires a societal shift toward facilitating equitable participation of persons with disabilities in cultural practices (Smagorinsky et al., 2017).

Vygotsky (1993) argued, “any physical handicap, be it deafness, blindness or inherent mental retardation, not only changes a person’s attitude toward the world, but first and foremost affects his relationship with people” (p. 76). Vygotsky’s terms may be harsh and problematic relative to modern discourses, but the sentiment remains relevant. Being diagnosed or otherwise labelled as atypical impacts a person’s participation in the social milieu. Vygotsky described this as “social dislocation” (p. 76) caused by identifying a person as different and responding in positive or negative ways. A deficit perspective toward disability masks “the gold mines of health inherent in each child’s organism, no matter what the affliction may be” (Vygotsky, 1993, p. 80). Cultivating social environments and opportunities for learning can impact educational experiences far more than biological attributes (de Valenzuela, 2014).

Part of my draw to sociocultural theory as a lens into disability is its attention to power and privilege in issues of disability. Scholars who posit learning as an individual process implied disability was an individual problem (Goodley, 2017; Titchkosky, 2003). In contrast, inclusion and equity are always relative to another person (Esmonde & Booker, 2017). It is paradoxical to study learning and disability at an individual level given its inseparable relationship to social
relations. If learning is relational, mediated, and situated, then understanding how disability and inclusion shape learning warrants a sociocultural perspective.

**Theoretical Framework**

The following outlines the theoretical framework used for this study. Specifically, I use the concept of figured worlds to understand how preservice teachers construct understandings of disability and inclusion from a sociocultural perspective. I engaged these understandings by examining representations (i.e., drawings) of inclusion and disability created by preservice teachers.

**Figured Worlds**

If someone is asked to think about a classroom, they are likely to imagine a teacher, students of similar age, rows of desks and chairs. Some students will have a first language other than English, some students will have disabilities, and/or some students will have grown up in the local community. The teacher is the authoritative figure who leads learning activities and answers students’ questions. Students demonstrate what they learn through solving problems, answering questions, and standardized tests. These types of typical characteristics make up what Holland et al. (1998) called a *figured world*. Of course, there are many exceptions to how actual classrooms manifest, but there is enough commonality that people would not confuse a classroom for say, a zoo.

Figured worlds are,

Socially and culturally constructed realm[s] of interpretation in which particular characters and actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others. Each is a simplified world populated by a set of agents (in the world of romance: attractive women, boyfriends, lovers, fiancés) who engage in a limited range of meaningful acts or changes of state (flirting with, falling in love with, dumping, having sex with) as moved by a specific set of forces (attractiveness, love, lust). (Holland et al., 1998, p. 52)
A figured world is made up of taken-for-granted assumptions and typical storylines about environments, activities, participants, language, and interactions (Gee, 2011). What is considered typical varies by context and is couched by people’s experiences in social and cultural groups. These worlds are socially produced and encompass people’s identities, agency, power relationships, social structures, and ideologies. Figured worlds are perpetually colliding, overlapping, and (re)forming as people move through time and space; figured worlds are not static.

Figured worlds are useful for understanding how people assume orientations to participate in a context, such as a classroom (Jurow, 2005). People always participate in and reconcile multiple figured worlds. For example, a student could participate in the figured worlds of schooling, science, romance, queerness, and being a person of colour. Such a student participates in these figured worlds simultaneously and they must decide which aspects of each world to prioritize and enact in a given moment.

Contrasting figured worlds are counter-worlds which represent “what should not be, what threatens us, and they position the persons presumed to inhabit them as relationally inferior and perhaps beyond the pale of any imagined community we would ever want to join” (Holland et al., 1998, p. 250). In other words, the figuring of a world “is often accomplished by the figuring of ‘the opposition’” (p. 250). Figured worlds of inclusion and disability are often constructed by declaring opposition to other worlds, such as the social model of disability which frames the traditional medical model as a counter-world (Goodley, 2017).

Since figured worlds are socially constructed, where certain actors and actions are valued over others, some people may be denied full or partial access to worlds because of their social positioning. Identities “trace our participation, especially our agency, in socially produced,
culturally constructed activities” (Holland et al., 1998, p. 40). For example, Holland et al. (1998) described a Nepalese woman who spontaneously climbed up the side of a house to reach the second floor because entering through the (first-floor) kitchen of the house of a higher caste (social status) was culturally forbidden. The woman’s positioning in a lower caste compelled their extreme actions to avoid violating cultural expectations. This striking example shows how figured worlds can dramatically impact agency and what storylines are socially available.

Figured worlds are historically formed but also “socially instanced and located in times and places” (Holland et al., 1998, p. 41). As new participants enter a figured world, they socially negotiate and interpret which actors, acts, and outcomes are valued. Figured worlds “set up identity and positionality as situationally contingent and under constant transformation” (Calabrese Barton & Tan, 2010, p. 192). A caveat of figured worlds is they are “simplifications about the world … which leave out many complexities” (Gee, 2011). However, any characterization of a social group or actions is a simplification. As Gee (2011) cautioned, simplifications can be harmful if taken as definitive “by implanting in thought and action unfair, dismissive, or derogatory assumptions about other people” (p. 77). For instance, in my research on postsecondary students with visual impairments (Ostrowski, 2016), how instructors characterized the figured world of visual impairment significantly altered how they interacted with such students. Negative or oversimplified interpretations of visual impairment could create barriers and limit access for students.

The nuances of how a figured world manifests within a specific context with particular actors and social structures will vary despite shared characteristics. Figured worlds are also layered and tangled, and since they are simplifications, assumptions about one world can colour assumptions about another. For example, Calabrese Barton and Tan (2010) found youth with
negative experiences in science classes at school also perceived science negatively outside of school. Fortunately, individual reproductions of a world can shift. Encountering and reproducing worlds in different contexts allows people to “[try] out new identities,” exercise agency in “asserting a new self,” and “imagine a new and different world” (Calabrese Barton & Tan, 2010, p. 192). The researchers investigated how youth at a community club leveraged agency to transform their identities and participation across the figured worlds of science, their community, and a green technologies after-school program. Several of the youth rejected science as they experienced it in school because they associated science with poor performance on assessments or as something “for nerds,” (Calabrese Barton & Tan, 2010, p. 209) which could jeopardize their social status. Simultaneously, the youth were interested in investigating “urban heat islands” within their city. They took heat measurements around the city, constructed models, consulted scientific experts, spoke with community members, analyzed their data, and documented their investigation with videos. They engaged in the same scientific practices typically taught in schools, but their agency and identities were not constrained by the norms and social structures of doing science in a school environment. The after-school program environment gave the youth agency to enter, enact, and expand the figured world of science. The youth could decouple science from what they disliked about school.

As an analytic tool, figured worlds give a lens to study how people are “drawn to, recruited for, and formed in [particular] worlds, and to become active in and passionate about them” (Holland et al., 1998, p. 49). Jurow (2005) studied how middle school students took on the role of architects to design a scientific research station in Antarctica as part of a mathematics project. The students had to create floor plans of the station while considering costs of building materials and environmental conditions (e.g., extreme cold). The students then presented their
designs to visiting professional architects to simulate a design review where students explained their designs and the visiting architects asked questions and offered feedback. Jurow noticed tension as students moved between the worlds of a classroom, being an architect, and learning math. Students sometimes volleyed between the importance of getting a good grade and being a good architect, since some students felt the latter was just a school task and did not reflect reality. Later, when professional architects visited the class and discussed students’ designs, the figured world of architecture became more sophisticated and meaningful as students’ ideas were couched against “how professional architects made sense of their design solutions, which allowed them to appreciate new problems and ways of approaching their solutions” (Jurow, 2005, p. 49).

Esmonde (2014) studied two cases of how students constructed and made sense of figured worlds corresponding to mathematics and social justice tasks. In one case students applied mathematics to global wealth distribution activity and in the other case, students investigated the distribution of wealth and resources in their city according to reported poverty levels. Esmonde (2014) examined how the teachers and students identified and invoked “the set[s] of normative or expected storylines that provide guides to (but never prescriptions for) activity” (p. 350) and to “discover who (or what) was granted agency and the kinds of actions that … characters engaged in” (p. 356) within figured worlds. Among the findings, students often positioned wealth and affluence as normative and poverty as an exception, and consequently constructed narratives of poverty as a tragedy. Esmonde (2014) noted, “learning about a figured world is not the same thing as learning within a figured world” (p. 351). They cautioned that when analyzing figured worlds, timescales and level of immersion are important to understand how figured worlds are constructed and engaged. As Holland et al. (1998)
explained, social positions and identities can prevent or obscure participation in a world. Students who have only ever known affluence cannot fully engage with or participate in a world of poverty while maintaining a position of affluence (Esmonde, 2014). This does not imply learning about a world is not valuable but is necessarily constrained, which should be acknowledged in such learning contexts.

Figured worlds offer a useful way to consider what storylines people consider typical for any given situation. They frame how different actors, actions, and artifacts are woven together, and which of these elements are included and excluded. Although figured worlds are simplifications of how the world works and leave out many complexities, they are the instinctive “first thoughts” (Gee, 2011, p. 77) that guide everyday actions.

**Representations**

Figured worlds are powerful, and often invisible forces that mediate human actions, like the woman who climbed up the side of a house (Holland et al., 1998). For preservice teachers, the figured worlds they perceive and construct as they move through their teacher education programs shape the practices they enact as they embrace classes of their own. Having preservice teachers engage these worlds fosters continuity and relevance between preservice teachers’ lived experiences, teacher education, and their practices.

For this study, I used representations as a mechanism to gain a sense of how preservice teachers understood figured worlds of disability and inclusion. Representations coalesce pieces of knowledge, fragments of experiences, shards of dissonance, and sparks of excitement. They convey the storylines of what actions, actors, and ideas are recognized over others. Figured worlds “are socially organized and reproduced” (Holland et al., 1998, p. 51) and representations capture a glimpse of that reproduction as tangible artifacts. Artifacts help “open up” (p. 61)
figured worlds and allow people to encounter different worlds. “They are the means by which figured worlds are evoked, collectively developed, individually learned, and made socially and personally powerful” (p. 61).

I used representations as a way for preservice teachers to create tangible artifacts of how they understand figured worlds of disability and inclusion. Representations hold power in conveying how people, objects, environments, and actions relate to each other (Kress & van Leeuwen, 2021). For instance, when drawing a classroom, the artist must decide where to place objects and people, what activities are happening, how to render people or objects, and what the environment looks like, which collectively give a glimpse into the artist’s understanding of figured worlds. Engaging with such details can support the development of inclusive environments by giving space for teachers to convey “the relationship between values and actions,… [to] make inclusive values explicit, and [to] design educational activities that uphold inclusive values” (Mergler et al., 2016, p. 20).

Halverson (2013) researched how youth created autobiographical representations of their lives by bridging digital art and new literacies. Halverson described this process as a representational trajectory where youth developed a story about the self and considered how they could represent their stories. Representational practices were a process of highlighting features, characters, ideas, and values (i.e., figured worlds). Halverson observed and interviewed youth in their creation and use of representations across youth media organizations. Among the findings, Halverson (2013) commented teachers seldom thought about how students “find their stories” (p. 135), and instead, focused on technique and working with tools. I believe teacher education programs focused on pragmatic aspects of inclusion and disability can fall into the same trap. Preservice teachers come with existing stories and they are expected to weave the stories told
within teacher education into stories of their future practice, but it seems preservice teachers’
existing stories and how they integrate with their teacher education is seldom made explicit.

In other research, Phillipson and Forlin (2011) examined drawings of diversity and
inclusion created by newly qualified teachers in Hong Kong. Over several weeks, participants
created drawings about an “issue of contention or interest regarding inclusive education in Hong
Kong” (p. 5). The drawings showed the participants’ perspectives as well as reflections of local
norms and practices. For instance, drawings of a “dragon boat race and the hurdle race
show[ed]” the “competitive nature of the education system” (p. 14) in Hong Kong, which
conveys inclusion as enabling students to compete. In another drawing, a participant depicted a
teacher as a flutist who was “skilled in building good relationship[s] with the students by
meeting their needs and providing a safe and comfortable environment” (p. 9) and similarly,
another drawing depicted an apple tree to “indicate the teacher’s protective and nurturing role”
(p. 11). Each of these offers glimpses into figured worlds in how students, teachers,
environments, and relationships were depicted in the drawings.

Drawings of schools and classrooms created by children have also been previously
studied. Weber and Mitchell (1995) and Lodge (2007) studied such drawings to understand how
children viewed and understood learning and school environments, as well as the people within
them. Lodge (2007) argued drawings “can be read and understood in a similar way to textual
discourse: through identifying and analysing the metaphors, choices, positioning, the
compositional effects, repetitions, assumptions and cliché’s employed to convey a message” (p.
147). Both studies showed how children conceived learning, themselves within classrooms, and
social hierarchies, such as by depicting teachers as authority figures by drawing them larger,
wearing formal attire, or “standing in front of the classroom by a blackboard or desk, talking and
pointing,” often to “lists of classroom rules, or lists of offenders” (Weber & Mitchell, 1995, p. 47). Such drawings conveyed clear and recognizable figured worlds of schooling. In later work, Weber and Mitchell (1996) found that some preservice teachers also portrayed teachers in roles of authority while others drew teachers as being nurturing, warm, and caring, showing contrasting conceptions of education and their roles as teachers.

Visual methods have also been used to examine the visual cultures of schools (Prosser, 2007). Like figured worlds, “the visual culture of a school is a combination of generic and unique elements. Generic visual culture describes observable, inscribed and encrypted similarities of schools in terms of visual norms, values and practices, which constitute taken-for-granted … schooling” (Prosser, 2007, p. 63). Visual analysis shows how certain spaces and practices convey aspects of figured worlds, such as configurations of furniture, spaces for social interactions (e.g., recess), and hierarchies (e.g., a teacher standing versus students sitting).

Drawings have also been leveraged to understand students’ perceptions of subject areas. Towers et al. (2017) and Towers et al. (2018), for example, examined children’s emotional relationships with mathematics. In such work, depictions of negative or positive emotions, or of mathematics as primarily cognitive processes give insight into how students understand and experience figured worlds of mathematics.

Across these studies, representations offered valuable insights into how students or teachers understood aspects of schooling and education. In this dissertation, representations embody preservice teachers’ ideas and convey ways of thinking. As detailed in Chapter 3, representations are imbued with individual and social histories and experiences, which can be parsed through analysis of patterns and conventions of artistic production (Kress & van Leeuwen, 2021). Creating representations gives preservice teachers opportunities to express what
stories they want to tell, highlighting what is salient such as in terms of disciplinary concepts, characters, identities, and values. Representations in this study show how preservice teachers construct understandings of figured worlds of disability and inclusion.

**Positioning of the Study**

Inclusion is a common goal of contemporary education, but how teachers implement this goal in practice depends on their understanding of the figured worlds of disability and inclusion. Teacher education programs attempt to convey particular ideals and practices in hopes preservice teachers will implement inclusion effectively. The literature indicates preservice teachers have generally positive sentiments toward inclusion and disability, but how those sentiments form is less clear.

Figured worlds orient what counts as typical actions and storylines. Previous research has considered what attitudes and beliefs teachers hold about inclusion and disability but omits the underlying social negotiation and discussion of the figured worlds of inclusion and disability. Further, existing studies (e.g., Loreman & Earle, 2007) often only investigated preservice teachers’ perspectives after-the-fact, such as questionnaires administered after a course or once teachers entered the field. How preservice teachers construct their understanding of figured worlds, how they negotiate understanding with peers, and how preservice teachers weave past experiences with local contexts to arrive at particular perspectives is uncertain. My research explores this process and deepens scholarly knowledge of how preservice teachers understand disability and inclusion.

My research also contributes to learning sciences scholarship, which has been somewhat quiet on disability. Learning sciences journals and publications (e.g., Gutierrez & Stone, 1997; Sawyer, 2014) only mention the word “disability” a handful of times in and largely in passing or
grouped within broader discussions of social justice (e.g., Tabak & Radinsky, 2014). Inclusion and disability have often been implicit in the Learning Sciences, but they have received little direct attention (Esmonde & Booker, 2017; Smith et al., 2017). My research also complements previous work using representations to consider schooling and education (Phillipson & Forlin, 2011; Weber & Mitchell, 1995) by also using representations as reflections of figured worlds.
Chapter 3: Research Design

In this chapter, I detail the research questions and study design. I employed a design-based research approach to develop and implement a set of representation activities. I collected multiple data sources (drawings, video recordings, interviews) and examined the data using visual discourse, interaction, and thematic analysis methods. The intention of my research design was to explore how preservice teachers understand and in what ways they construct understanding of inclusion and disability. I used representations (i.e., drawings) to investigate implicit and explicit preservice teachers’ understanding of inclusion and disability within the context of a Bachelor of Education course.

Research Questions

The questions that guided my research include:

1) In what ways do preservice teachers construct their understanding of inclusion and disability?
   a) In what ways do representations show how preservice teachers understand figured worlds of inclusion and disability?
   b) In what ways do preservice teachers individually represent figured worlds of inclusion and disability?
   c) What influences how preservice teachers represent figured worlds of inclusion and disability?
   d) In what ways do preservice teachers negotiate figured worlds of inclusion and disability through collaborative representations?
   e) In what ways do preservice teachers socially negotiate figured worlds of inclusion and disability in the real world?
Philosophical Assumptions

I approached my research from a sociocultural perspective, where teaching and learning are dialogic processes distributed among people, environments, and contexts (Vygotsky, 1938/1978). Knowledge is socially constructed and situated rather than found. From this epistemological perspective, the experiences and perspectives of people infuse knowledge, and it is perpetually incomplete, evolving, and relational. What counts as knowledge and learning are socially negotiated and enacted. Teaching and learning manifest through the collective development, investigation, and refinement of diverse ideas.

This sociocultural perspective motivated the representation activities as an avenue to bring diverse ideas into contact and support preservice teachers in constructing shared interpretations of inclusion. My chosen methodology also aligns with sociocultural theory by studying learning in authentic settings and deriving theoretical contributions that are context aware.

Design-Based Research

Inclusion is both an orientation and a practice, and creating designed opportunities for preservice teachers to bring their perspectives into the course and negotiate an understanding of inclusion was key to this study. This goal motivated a research approach that incorporated such designed opportunities into the learning context to investigate what preservice teachers understood as inclusion and how their understanding formed.

To achieve these goals, I employed a design-based research (DBR) approach to develop and implement a novel practice (i.e., representation activities), study its use in situ, inform teaching practices, and contribute to scholarship. I refined the development and implementation of the practice over design phases, as detailed in the Study Structure section. The representation
activities were novel to the course under study. Previously, the course addressed inclusion primarily in terms of pragmatic concerns such as developing individualized program plans and inclusive lesson plans with limited explicit opportunities for engaging preservice teachers’ perspectives toward inclusion. The representation activities allowed instructors to better understand preservice teachers’ perspectives and for preservice teachers to articulate and negotiate their perspectives explicitly alongside pragmatic concerns of inclusion.

McKenney and Reeves (2012) characterized DBR as the iterative design and study of learning innovations in natural settings to advance theory and practice that are context sensitive. Also, DBR strives to engage participants actively (Brown, 1992) and go beyond narrow measures of learning by examining the processes of learning as they happen (Collins et al., 2004). Studying learning in real-world contexts fortifies the ecological validity and relevance of the innovations and theoretical contributions generated through DBR (McKenney & Reeves, 2012; The Design-Based Research Collective, 2003). I also took inspiration from Gutiérrez and Jurow (2016) in using design research to advance a commitment to social change in how inclusion and disability manifest in educational discourses and to promoting more equitable learning opportunities for the future students of preservice teachers. One of my goals was to forge opportunities for preservice teachers to build intention and awareness of “how particular cultural practices came into being and how they have enabled and constrained possibilities for learning, and how these understandings inform future-oriented practices” (Gutiérrez & Jurow, 2016, p. 567). As with Gutierrez and Jurow’s work on social design experiments, I hoped to expand traditional aims of DBR to advance theories and practices of teaching and learning in ways that support preservice teachers in developing equitable perspectives and practices they can pursue once they have classrooms of their own.
DBR has been described as a collection of approaches and methods. Cross-cutting the various flavours of DBR approaches are four tenants (Cobb et al., 2003; Collins et al., 2004; Gutiérrez & Jurow, 2016; McKenney & Reeves, 2012):

- **Theoretically oriented**: Theoretical orientations frame the research and designed innovation.
- **Iteratively designed learning innovations**: There is a focus on designing and implementing learning innovations which are refined over multiple phases of implementation within real-world contexts.
- **In situ**: The research occurs in real-world contexts in partnership with educators and students.
- **Theoretical and practical contributions**: Building on the former tenants, the study contributes to theoretical understanding and pragmatic considerations for design principles and implementation.

**Theoretically Oriented**

This study is underpinned by a sociocultural perspective, where teaching and learning are relational processes (Vygotsky, 1938/1978). Taking inclusion as a sociocultural issue, I used figured worlds to motivate the design of the representation activities to interpret preservice teachers’ understanding of inclusion and disability. Figured worlds are socially negotiated realms of interpretation (Holland et al., 1998) that encompass narratives of how people interpret and take part in everyday actions. They are a way to interpret how preservice teachers communicate what inclusion means to them and how they envision it manifesting in practice. The representation activities offered a way to surface preservice teachers’ perspectives in a tangible form and enabled them to negotiate understandings of inclusion with others. Social change
requires social interactions and negotiations. In other words, advancing change requires engaging the narratives, issues, and possibilities of a world (Gutiérrez & Jurow, 2016). Creating and discussing representations can foster such processes by creating spaces for preservice teachers to discuss, contemplate, and negotiate ideas about the participants of a world and how significance is assigned to acts and outcomes (Holland et al., 1998). Representations can also convey narratives of an inclusive world in ways that are different from verbal modalities (Kress & van Leeuwen, 2021).

**Iteratively Designed Learning Innovations**

This dissertation focuses on the second of three design phases (cycles), with each phase informing refinements to the design for the next iteration. Each phase included the implementation of the representation activities and data collection during a 12-week semester along with planning and analysis occurring in the surrounding months during one academic year. All phases took place within the same course context but with different cohorts of preservice teachers.

McKenney and Reeves (2012) described two orientations to innovations: research conducted *through* interventions and research conducted *on* interventions. While I addressed both, I primarily examined the former to “[understand] the responses the intervention engender[ed]” (p. 23). I was interested in how the participants took up the representation activities, their interactions while completing the tasks, and the kinds of representations they generated. Secondarily, I examined the innovation itself as a tool for preservice teachers to negotiate understandings of inclusion.
In Situ

The strength of DBR relies on how the designed innovation (i.e., representation activities) is taken up by the participants within their everyday contexts (Brown, 1992; McKenney & Reeves, 2012). To bolster the relevance of the representation activities, I worked closely with the course instructors to align the activity with the course goals, content, and context. We couched the prompting questions given to preservice teachers in creating their representations within the other course activities, such as readings, assignments, and lectures. This brought the design into a real-world context where pragmatic concerns came to bear, such as time, materials for drawing, and timing of the activity within the course.

Studying the representation activities in situ was key to interpreting how the preservice teachers formed their understanding of inclusion relative to the context of the course. The instructors and I encouraged students to consider other aspects of the course when negotiating their understanding to foster relevance and continuity. Understanding how preservice teachers formed and negotiated representations required being close to the action to capture the richness of preservice teachers’ interactions and production of representations.

Theoretical and Practical Contributions

The dual goals of DBR are to contribute to theoretical and practical understanding. In terms of scholarship, this study complements previous work around how people negotiate and co-construct figured worlds (e.g., Esmonde, 2014; Jurow, 2005). As well, the study shows how representations convey the ways preservice teachers understand inclusion and disability.

Kelly (2004) argued “design studies should produce an artifact that outlasts the study and can be adopted, adapted, and used by others” (p. 116). A pragmatic output of the study is the set of representation activities, which I implemented in three large cohorts of preservice teachers.
(each with over 300 students) across multiple years. A portion of the instructional team also shifted from year to year, further highlighting the robustness of the design. The design also marked an epistemological shift in the course from traditional, more clinical orientations to disability and inclusion to also considering the interplay of sociocultural issues; the frequent comments of sociocultural issues in preservice teachers’ postpracticum interviews proved the shift poignant. There is potential for others to adopt the activity to represent other kinds of figured worlds. I designed the innovation a particular context in mind but its general form is flexible enough to be useful in other contexts.

**Representation Activities**

With the goal of creating opportunities for preservice teachers to engage with, express, and negotiate an understanding of inclusion and disability, I developed a set of representation activities. The activities espouse my aim of surfacing and bringing into contact preservice teachers’ understanding of figured worlds of inclusion and disability. Below I describe how the representation activities were implemented in the second phase (year) of the study based on refinements from the first phase (pilot). I use Sandoval’s (2014) notion of conjecture mapping to describe elements of the designed activities and their intended purposes. Conjecture, in this case, refers to the “provisional nature of ideas we have about how to design a learning environment” (p. 22). According to Sandoval, a design conjecture relates the designed innovation (e.g., tools, materials, task structures) to mediating process (e.g., what participants do, participant interactions, artifacts), and a theoretical conjecture relates mediating processes to desired outcomes (e.g., learning, engagement). As Sandoval emphasized, conjecture mapping does not show causality between fine-grained variables. Instead, conjecture mapping shows relationships
between key design elements, mediating processes, and patterns of outcomes in broad strokes to refine and trace design decisions.

In my research, the set of representation activities included five parts spread over nine weeks: 1) individual representations, 2) sharing of representations, 3) interpretation of representations, 4) collaborative representations, and 5) reflections.

1. **Individual representations**: Each preservice teacher created an individual sketch in response to a prompt (i.e., Draw what you think inclusion is within a learning context) and noted what influenced their representation, such as experiencing disability themselves, relatives and friends, media, or courses (see Appendix B for prompts). Expressed as a design conjecture (Sandoval, 2014), the creation of representations using simple materials (i.e., paper and coloured markers) was meant to prompt preservice teachers to think about how to synthesize and represent their ideas in ways beyond just text (Weber & Mitchell, 1995). Further, representations afforded opportunities to show relationships among rendered elements (e.g., teachers, students, resources, actions) and to show ideas in abstract forms (e.g., swirling coloured lines) that may be otherwise difficult to express verbally (Kress & van Leeuwen, 2021). Preservice teachers created the first representation individually so that each person had an opportunity and space to consider and express their understanding of inclusion and disability before working collaboratively with peers where individual perspectives could be obscured.

2. **Sharing of representations**: I uploaded the individual representations to a shared digital gallery. The design conjecture underlying sharing was that the collection of representations could support class discussions and afford chances for preservice teachers to encounter diverse interpretations of disability and inclusion.
3. *Interpretation of representations:* In small groups, preservice teachers interpreted each other’s representations from the digital gallery and discussed them. Preservice teachers used the representations as tangible artifacts to situate their perspectives among peers, instructors, and authoritative sources. As a theoretical conjecture (Sandoval, 2014), interpreting others’ representations aimed to support preservice teachers in situating their ideas and to expand the pool of ideas available to preservice teachers when creating collaborative representations.

4. *Collaborative representations:* Each group of preservice teachers collaboratively created a representation where diverse ideas and perspectives could come into contact as part of socially negotiating an understanding of disability and inclusion. This makes up another design conjecture that builds on the prior activities where preservice teachers had to not only consider the ideas of others but also work with them collaboratively to create a representation. The creation of a representation then acts as a mediational process (Sandoval, 2014) to support learning “as an activity in which heterogenous meaning-making practices come into contact—explicitly and implicitly, intentionally and emergently—to generate new understandings, extend navigational possibilities, and adapt meaning-making practices to new forms and functions” (Rosebery et al., 2010, p. 324).

5. *Reflections:* Preservice teachers drew upon the repository of representations to reflect on their perspectives, how they evolved over the course, and to consider implications for inclusive practices to support students’ needs.

Representations can convey complex ideas, their relations, and a creator’s worldview in ways that are unique from verbal modalities (Kress & van Leeuwen, 2021). The combination of individual and collaborative drawings gave preservice teachers an opportunity to bring their
perspectives into discussion in a tangible form. I designed the activities to use readily available resources so that a team of instructors could reliably facilitate the activities within a large-enrolment course.

**Study Structure**

To structure my research, I engaged in iterative phases of inquiry (McKenney & Reeves, 2012). Each phase included elements of design, implementation, data collection, and analysis to inform refinements for the subsequent phase. This dissertation focuses on the second of three phases. The first phase, occurring during 2018, involved a pilot study to create a preliminary version of the representation activities to beta test “the functionality of an intervention and how it interacts in context” (McKenney & Reeves, 2012, p. 138). The second phase, in 2019, refined the representation activities and expanded the data collection methods as part of the dissertation and to assess how “the intervention meets its goals when implemented on its intended scale” (p. 138). The third phase, in 2020, continued with refining the representation activities beyond the scope of this dissertation.

**Pilot Study**

The pilot study was used to develop and try out a preliminary version of the representation activities (see Appendix D). Planning for the pilot began in 2017 with data collection during the Winter 2018 (January to April) semester. I devised the initial activity based on literature and in coordination with the plenary instructor of the course. My goal was to develop the basic structure of the activity, assess how preservice teachers took up the activity, and work through pragmatic considerations of implementing the task within a large-enrolment BEd course with a large instructional team (details of the course and research context are described in subsequent sections). The timeline of the pilot study is shown in Figure 1.
The pilot allowed me and the plenary instructor “to get a sense of how the intervention
will perform in various contexts and what kind of real-world realities need to be addressed for
the design to have a chance of success under representative conditions” (McKenney & Reeves,
2012, p. 145). In addition to assessing participants’ engagement with the representation
activities, the pilot enabled me to try out data collection methods and sources.

A third-party proxy invited all preservice teachers enrolled in the course to participate in
the pilot study, following the same recruitment procedures as in the second phase (detailed in the
next sections). All preservice teachers enrolled completed the representation activities during
regular class time regardless of their participation in the pilot study. In Week 1, preservice teachers created individual and collaborative drawings of inclusion within a 50-minute session in response to the prompt: “draw/sketch what you think inclusion is as a concept.” The preservice teachers were supplied 8.5 in. by 11 in. white paper and coloured markers and were asked to include a written description of their drawings. Self-selected groups of four to six students created the collaborative drawings. I collected and scanned the individual and collaborative drawings and uploaded them to an online gallery accessible to all preservice teachers in the course.

In Week 3, during another 50-minute session, the preservice teachers were given time to browse and discuss the drawings from Week 1. The instructors asked the preservice teachers to “collaboratively, draw accommodation,” again in self-selected groups of four to six. I also collected and scanned these drawings. In Week 9, with access to all drawings, the instructors asked the preservice teachers to write reflections (approximately 200-300 words) on how their understanding of inclusion and disability may have evolved during the course and if they would draw anything differently if they were to repeat the task. In Week 15, following their practicum placements (Weeks 10-14), I invited consenting participants to focus group interviews to learn their perspectives and how they implemented or observed inclusion in real-world contexts.

As a pilot study, I delimited the data sources to the collection of coursework (e.g., drawings, reflections) and audio recordings and transcripts of the interviews. Details of the pilot study findings (Ostrowdun, 2020) are beyond the scope of this dissertation, but the pilot informed several refinements to the procedures and data collection methods for the second phase (Table 1).
### Table 1

*Study Refinements Between Phase 1 (Pilot) and Phase 2*

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1:</strong> 50 minutes for individual and collaborative drawings</td>
<td><strong>Week 1:</strong> 50 minutes for individual drawings and discussion</td>
<td>50 minutes was insufficient to complete two drawings in one session.</td>
</tr>
<tr>
<td><strong>Week 1:</strong> Prompt: “Draw/sketch what you think inclusion is as a concept”</td>
<td><strong>Week 1:</strong> Prompt: “Draw/sketch what you think inclusion is (within a learning context)”</td>
<td>To encourage a focus on inclusion in terms of teaching and learning.</td>
</tr>
<tr>
<td><strong>Not Applicable</strong></td>
<td><strong>Week 1:</strong> A brief discussion of how inclusion was conceptualized in forthcoming parts of the course was added before the drawing instructions were given.</td>
<td>To scaffold and encourage connections between the drawing task and other course topics/tasks.</td>
</tr>
<tr>
<td><strong>Preservice teachers scanned and uploaded their drawings</strong></td>
<td>I scanned and uploaded preservice teachers’ drawings</td>
<td>To improve scan quality inconsistency.</td>
</tr>
<tr>
<td><strong>Week 3:</strong> Collaborative drawing</td>
<td><strong>Collaborative drawing moved to Week 5</strong></td>
<td>To allow more time between drawings and a chance for preservice teachers to complete other course tasks before the course content shifted to more class-wide approaches.</td>
</tr>
<tr>
<td><strong>Week 3:</strong> Prompt: “Collaboratively, draw accommodation”</td>
<td><strong>Week 5:</strong> Prompt: “Collaboratively, draw an inclusive environment…. Go beyond just accommodations or geographic inclusion”</td>
<td>To encourage more holistic considerations for inclusion and disability.</td>
</tr>
<tr>
<td><strong>Data sources: coursework, interview recordings/transcripts</strong></td>
<td><strong>Data sources: video recordings of drawing tasks, coursework, interview recordings/transcripts</strong></td>
<td>To examine negotiation processes and interactions among preservice teachers.</td>
</tr>
</tbody>
</table>
From the first phase, the plenary instructor and I recognized 50 minutes was insufficient for the participants to complete two drawings and discuss them. My initial conjecture of having preservice teachers create representations as a way for preservice teachers to express their understanding of inclusion and disability was successful, but the quality and detail of preservice teachers’ drawings was time constrained. For Phase 2, I modified the Week 1 session to only include the individual representation task. I kept the physical setup of having the preservice teachers sit in self-selected groups of four to six so they “had access to each other’s representations as well as the opportunity to observe their peers as they created and negotiated representations … [and so] they could see and potentially comment upon the work of other[s]” (Danish & Enyedy, 2007, p. 22).

We also pushed back the collaborative drawing from Week 3 to Week 5 in the second phase to allow more time for preservice teachers to engage with course content. This also marked the Week 5 collaborative drawing as a fulcrum in moving from individual (e.g., IPP) to class-wide (e.g., universal design for learning) considerations for inclusion and disability. This transition point motivated revising the prompt from focusing on accommodations to inclusive environments. Similarly, the nudge to go beyond accommodations and geographic notions of inclusion, in the second phase, was meant to encourage more holistic considerations and reinforce that “it is not adequate to merely place students with diverse learning needs in the same classroom as typically developing students” (Ozdowska et al., 2021, p. 938). As shown in the findings, the added instruction to go beyond accommodations shifted how the participants discussed and undertook the representation tasks. As Danish and Enyedy (2007) found in studying representations of bees created by first grade students, even subtle guidance by a teacher can change the nature of representation by specifying parameters to consider that might
otherwise be left to chance. Given the historic associations of inclusion and disability with accommodations in education (Goodley, 2017), I strived to encourage more holistic considerations while keeping the task open-ended.

I added video recording of the participants in the second phase to gain a better understanding of preservice teachers’ interactions and negotiations. The rest of the dissertation focuses on the second phase and does not include data, analysis, or findings from the first phase pilot study.

Research Context

The research was situated within a compulsory first-year Bachelor of Education (BEd) course at a Canadian university. The course considered issues and practices around differentiated instruction, universal design for learning, and inclusive education through the lenses of cognition, behaviour, and emotion. The course took place in the second semester of the BEd program and included two lectures (75 minutes each) and a once weekly laboratory session (50 minutes each) over nine weeks. The plenary instructor led the lectures and a team of six sessional instructors led the laboratories.

At the time of the (Phase 2) study, 348 preservice teachers were enrolled in the course and they were split across two lecture sections and 12 laboratory sections. One lecture section and seven laboratory sections were dedicated to preservice teachers taking the elementary education track, while the other lecture section and five laboratory sections were for the secondary education track. The course content and tasks were the same for all preservice teachers regardless of track, with minor adjustments made to plenaries and assignments, such as using examples or scenarios that matched the age groups of elementary or secondary students, respectively. The laboratory sessions were capped at 35 students.
The course content bridged educational theories with the guidelines and standards set by the provincial education ministry. Note, while my analysis focused on the disability strand of inclusion, a broader range of topics was addressed in the course such as English language learners and students that experience trauma. Given that all students in the course, regardless of their participation in the study, did the same activities, the prompts for the drawing task were open-ended which resulted in some students depicting other strands of inclusion beyond disability.

A goal of the course was for preservice teachers to synthesize educational theories with specific teaching strategies to foster inclusive learning environments. This goal made the course a suitable context to address the research question of how preservice teachers construct their understanding of disability and inclusion.

There were five learning tasks for the course:

1. **Laboratory tasks:** Preservice teachers engaged with topics brought up in lectures in smaller groups through hands-on activities and discussions.

2. **Individualized program plan:** Preservice teachers developed an individualized program plan following guidelines set by the provincial education ministry using a psychoeducational assessment, based on a real student case. They had to identify strengths, challenges, support strategies, and educational goals for a given case. They also had to provide a rationale for the plan using parent-friendly language.

3. **Midterm exam:** A summative assessment based on topics from course activities, readings, and lectures.

4. **Universal design for learning lesson plan explanation:** Using a realistic classroom scenario, preservice teachers created a lesson plan that aligned with the principles of
universal design for learning (Meyer et al., 2014) that supported a variety of student needs.

5. Final exam: A summative assessment of the course content.

Excluding the midterm and final exams, many of the learning activities involved collaboration in pairs or small groups (up to six people). In these tasks, the preservice teachers considered how different theoretical perspectives, teaching strategies, provincial guidelines, and their perspectives could be synthesized to foster inclusion.

To situate the research context within the BEd program, in their first semester, preservice teachers took courses about educational theory; science, technology, engineering, and mathematics education; literacy and language; and participated in an in-school field experience (practicum) placement. This first field experience was primarily observational so preservice teachers could get a feel for how schools and classrooms looked and functioned.

Participants and Recruitment

I used purposeful sampling (Creswell, 2012; Patton, 2015) to invite all 348 preservice teachers to participate for four reasons. First, I selected this course because of its topic relevance and my familiarity with it from previously being a teaching assistant and a laboratory instructor for the course. The plenary instructor and I had established a rapport, and she agreed to collaborate on my research. My familiarity allowed me to integrate the representation activities closely within existing course content and structure.

Second, studying learning in-context is key to DBR and all preservice teachers enrolled in the course contributed to this context. Inviting all preservice teachers to participate afforded access to the broadest range of preservice teachers and a large data set helped make the research findings more robust.
Third, inviting all preservice teachers hedged against the potential for a low response rate and participant attrition.

Fourth, multiple data sources were collected and preservice teachers had the option to select which aspects of the research to participate in. As anticipated, more involved participation options, such as interviews, attracted fewer participants.

Recruitment was done in-person, during a lecture period in the first week of the course by a third party to satisfy ethics requirements, since I was a laboratory instructor for the course at the time. The third party invited preservice teachers to participate and consent forms were distributed during recruitment. Interested preservice teachers returned completed consent forms, which were stored securely per institutional ethics policies.

In total, 197 preservice teachers consented to participate in one or more aspects of the study, of which seven withdrew prior to the interviews but agreed to retaining data collected up to the point of withdrawal. Specifically, 75 participants attended the video recording for the individual drawing task, 108 participants attended the video recording for the group drawing task, 69 participants attended both video recordings of the individual and group drawing tasks, and 34 participants attended the interviews/focus groups. To obtain a more complete data set, only participants that attended the video recording of the group drawing task and that consented to collecting their coursework were invited to the interviews. The data collected from the 34 interview participants made up the data set for analysis, which included their individual and group drawings, coursework, recordings, and interviews. After the data collection, 2 of the 34 participants’ individual drawings were excluded to bound the data to drawings about inclusion where disability was the primary focus, leaving a final set of 32 individual drawings.
Methods of Data Collection

As is common in DBR (Anderson & Shattuck, 2012), I employed multiple methods of data collection. Here, I detail how each data source related to the research questions (RQ).

Individual representation (drawings, video recordings): During the Week 1 laboratory session (50 minutes) of the course, the instructors supplied all preservice teachers with 8.5 in. by 11 in. white paper and coloured markers to create individual drawings in response to a prompt: “Draw/sketch what you think inclusion is (within a learning context)” (see Appendix B, for the prompts and Appendix C for the representation templates, Figures C1 and C2). They also described their drawing in words and indicated what influenced their drawings (RQ1c). These drawings served two purposes: to give a baseline for understanding how the participants represented figured worlds of inclusion and disability (RQ1) and to act as currency in discussing their ideas with peers (RQ1d). The video recorded laboratory sessions for participants were held during the regularly scheduled laboratory times but in a location separate from the non-recorded sessions to satisfy ethics requirements. A pair of research assistants, who were themselves seasoned teachers and familiar with the course content, led recorded laboratory sessions. The format and content of the recorded sessions was otherwise identical to the non-recorded sessions led by the laboratory instructors. I facilitated the training of the laboratory instructors and had them create drawings themselves before leading their students in the activity.

I scanned the drawings created by participants and non-participants and uploaded them to a digital gallery accessible to all preservice teachers in the course. The plenary instructor and I reviewed the drawings to inform class discussions and connections to course content.

Individualized program plan (documents): In Weeks 2-4, the preservice teachers collaboratively created an IPP based on a psychoeducational assessment of an authentic student
case. I collected these but deemed them too auxiliary to be included. Since the IPP task was highly structured and did not directly ask the participants to describe inclusion, the data would have required a different form of analysis and have been difficult to integrate with findings from the other data sources. As well, preservice teachers self-formed their groups, leading to mixed groups of participants and non-participants. I collected materials only from groups where all members were participants.

*Collaborative representation (drawings, video recordings):* During the Week 5 laboratory session, the participants, in small groups (four to six people), interpreted the drawings of their peers using the digital gallery. The participants then created collaborative representations in response to a prompt: “Collaboratively, draw an inclusive environment … [that goes] beyond just accommodations or geographic inclusion” (Appendix B) and indicated what influenced their drawings (RQ1c). A group drawing showed how the participants negotiated a shared interpretation of inclusion and disability (RQ1d), and how different perspectives bumped against each other. These drawings acted as artifacts of how the participants represented figured worlds. As with the individual representation task, the video recorded laboratory sessions took place in a location separate from the non-recorded laboratory sessions.

*Universal design for learning lesson plan (documents):* Similar to the IPP task, preservice teachers created lesson plans using the principles of universal design for learning that supported a range of student needs (Week 7). This task broadened inclusive strategies to a class-wide level. I collected these but deemed them too auxiliary to be included. As with the IPP, this data would have required a different form of analysis and would have been difficult to integrate with the other data. Preservice teachers self-formed their groups and only materials from groups where all members were participants was collected.
End of course reflection (documents): At the end of the course (Week 9), the preservice teachers looked back at their initial drawings and reflected on if they would draw anything differently, if their ideas or perspectives had shifted, current influences of their ideas, and any concerns they had going into their second field experience (practicum) placement. I collected these but did not end up using them in favour of richer interview data for the analysis.

Post-practicum focus group interview (audio recordings, field notes): Following the course, preservice teachers completed a second practicum. Over four weeks, the participants worked up to a one-third instructional load where they prepared and led learning activities. I invited all participants that attended the video recording of the group drawing task to semi-structured focus group interviews (60 minutes) to learn details about their representations, their understanding of inclusion and disability, and their experiences of trying to implement inclusion in real-world contexts (see Appendix A). The interviews were audio-recorded.

Plenary Instructor meetings (field notes): I took field notes during meetings between myself and the plenary instructor to help trace our decisions and refinements to the representation activities or other course tasks as the semester unfolded.

In-between the individual and collaborative representation activities, the instructor and I did a cursory review of the representations. This review informed refinements to the drawing prompt for the collaborative representation activity. We similarly reviewed the collaborative representations to inform the procedures for the reflection task. While the participants were in practicum, I went over the collected data to refine the focus group interview questions.

Apart from the focus group interviews, all activities were integrated within the course. All preservice teachers enrolled in the course completed the representation activities, IPP, UDL
lesson plan, and reflection regardless of their participation in the research. Data collection occurred from January to May 2019 (Figure 2).

**Figure 2**

*Research Activities Timeline*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeline - Winter 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation and instructor training on representation activity</td>
<td>Week 1, Week 2-4, Week 5, Week 7, Week 9, Week 10-14, Week 15</td>
</tr>
<tr>
<td>Individual representations</td>
<td></td>
</tr>
<tr>
<td>IPP</td>
<td></td>
</tr>
<tr>
<td>Collaborative representations</td>
<td></td>
</tr>
<tr>
<td>UDL lesson plan</td>
<td></td>
</tr>
<tr>
<td>Reflection</td>
<td></td>
</tr>
<tr>
<td>Practicum (field) placement</td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td></td>
</tr>
</tbody>
</table>

**Methods of Data Analysis**

I reviewed the data multiple times and looked across the data sources to establish through-lines and strengthen the findings. The analysis of the drawings, descriptions, and video recording transcripts from the individual drawing task followed a two-cycle coding approach (Miles et al., 2014). First-cycle codes summarized segments of data to develop an initial understanding of the data in broad strokes. I analyzed the drawings and descriptions, and the participants’ conversations around them, to characterize how preservice teachers represented
figured worlds of inclusion and disability. The interviews were transcribed and analyzed for themes to bolster my analysis of the other data sets and to examine how the preservice teachers enacted inclusion in real-world contexts.

**Analysis of Visual Data**

In identifying figured worlds of inclusion and disability from the participants’ drawing, I used a visual discourse analysis approach (Albers, 2007; Albers et al., 2009; Kress & van Leeuwen, 2021). Creating a drawing is an intentional act involving decisions about what to draw and what to leave out. Each mark on a page has significance, even if the creator is not fully aware of it (Kress & van Leeuwen, 2021). Drawings convey explicit meanings as intended by the creator as well as implicit meanings that reflect the social milieu and histories of the creator and the context at the time of production. As with written texts, over time, conventions have formed for the production and interpretation of images. Kress and van Leeuwen (2021) described this as a visual grammar in which “depicted elements – people, places and things – combine in visual ‘statements’ of greater or lesser complexity and extension” (p. 1). This grammar, they argued, applies independent of training or skill in fine arts practices or expertise, which made it well suited as an analytical framework for preservice teachers’ drawings where there were no expectations of prerequisite skills or expertise.

Albers (2007) combined visual grammar (Kress & van Leeuwen, 2006) and discourse analysis (Gee, 2005) into an analytic framework:

Visual discourse analysis, like discourse analysis, addresses the discourses that emerge within visual text [image], the text itself, the macro and micro conversations surrounding the making and viewing of texts, and the visual text as a communicative event, especially within classrooms. (Albers, 2007, p. 84)

I adapted Albers’ visual discourse analysis framework to focus on three aspects:

- visual grammar
• intertextuality
• interactions and discourses

Visual grammar, as outlined by Kress and van Leeuwen (2021), attends to the perceptible attributes of the drawings such as prominence, objects, composition, activities (e.g., reading), locations, behaviours (e.g., helping others, collaboration), and depictions of the body (e.g., shapes, expressions). I also looked for patterns in the types and frequency of objects included in drawings, such as how the participants situated people and objects with other people and objects in a classroom (Weber & Mitchell, 1996).

Intertextuality acknowledges that images “are never created in isolation but in direct relation to others” (Albers, 2007, p. 92) images, texts, and systems of communication. Fairclough (2003) described intertextuality as “relations between one text and other texts which are ‘external’ to it, outside it, yet in some way brought into it” (p. 39). In this case, I looked for references to external concepts, systems (e.g., curriculum), or experiences (e.g., other assignments) in the drawings and interactions of preservice teachers.

Interactions and discourses took into account the conversations preservice teachers had—as observed in the video recordings—around the production and interpretation of drawings. I also considered the social contexts surrounding preservice teachers and the potential influences on what and how drawings were produced. For instance, how their social position as preservice teachers or group dynamics during the collaborative task may have influenced their drawings and discussions around inclusion and disability.

In addition to the drawings themselves, I used the accompanying drawing descriptions to bolster my interpretations of the drawings as representations of figured worlds of inclusion and disability. In the first cycle of analysis, I used semi-open coding of the individual and group
drawings and descriptions within broad categories of people, environments, forms of diversity, interactions, dispositions, practices, and objects (see Table 2). I also reviewed transcripts from the video recordings to pull excerpts that could flesh out details of the participants’ ideas around the production and discussion of the drawings.

**Table 2**

*Coding Scheme*

<table>
<thead>
<tr>
<th>Code</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Family, friend, student, teacher</td>
</tr>
<tr>
<td>Emotion</td>
<td>Comfort, positive, negative, love, compassion</td>
</tr>
<tr>
<td>Environment</td>
<td>Classroom, home, school, outdoor, furniture</td>
</tr>
<tr>
<td>Interaction</td>
<td>Collaboration, individual work, encouragement, community</td>
</tr>
<tr>
<td>Disposition</td>
<td>Facilitator, gatekeeper, embracing diversity</td>
</tr>
<tr>
<td>Forms of diversity</td>
<td>Cognitive, body/physical, behaviour, disability</td>
</tr>
<tr>
<td>Practice</td>
<td>Universal design for learning, accommodation, differentiation, individualized program plan</td>
</tr>
<tr>
<td>Objects/symbols</td>
<td>Nature, brain, heart, globe, circle</td>
</tr>
</tbody>
</table>

In the second analysis cycle, I reassessed the initial codes to “to develop a sense of categorical, thematic, conceptual, and/or theoretical organization from your array of first cycle codes” (Saldaña, 2013, p. 207). The second cycle solidified themes and helped make connections between data sources, social relationships, and theoretical constructs (Saldaña, 2013). With the initial codes (Table 2), I reorganized and reformed the first cycle codes into storylines. I use storylines as a term that expands the traditional notion of thematic data clusters to give a sense of the narratives associated with a theme. While Holland et al. (1998) used storylines to reference
more discrete or literal narrative arcs of a figured world, I use the term more generally to identify groupings of data that convey similar narratives. Similar to Esmonde’s (2014) coding of storylines as collective constructions of “the typical actions that characters engage in (e.g., the teacher assigns homework) as well as the relationships between characters (e.g., students can be friends with one another but are not friends with the teacher)” (p. 357), my coding describes the assumptions, practices, characters, and outcomes conveyed by the participants in their individual and co-constructed representations of figured worlds of inclusion and disability. Some drawings conveyed multiple storylines and were referenced accordingly in the findings. Each drawing represents a version of the figured worlds of inclusion and disability. Figured worlds are made up of many storylines and the drawings offer a glimpse into the storylines the participants associated with worlds of inclusion and disability.

**Analysis of Interactions**

For the group drawing task, I supplemented visual analysis (i.e., visual grammar, intertextuality) with a more nuanced interaction analysis of the video transcripts to examine how the participants negotiated ideas while creating collaborative drawings¹ (Gupta et al., 2016; Jordan & Henderson, 1995). This was also a way to examine how and when the participants unpacked the implicit meanings of the ideas drawn (Kress & van Leeuwen, 2021). Using interaction analysis, I identified what resources the group members drew upon, how those resources were taken up (or not) by others, and how group member interactions shaped the trajectory of their negotiations in representing figured worlds.

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¹ I use the term collaboration to generally describe a social process where two or more people engage in a task or activity together that goes beyond mere cooperation, such as through discourse, discussion, and negotiation, and where the ideas or artifacts created during or resulting from collaboration cannot be easily separated into constituent elements.
I used interaction analysis “to take into account more than talk” (Jordan & Henderson, 1995, p. 65), specifically the interactions involving the production of representations, where “talk and physical activity [were] complexly intertwined” (p. 66). For instance, participants sometimes responded to verbal turns with physical actions or gestures and vice versa. As I observed, physical artifacts can shape interactions and collaborative meaning making (Jordan & Henderson, 1995). I examined how the combination of talk, physical action, and objects contributed to the participants’ efforts to stabilize meanings. Invocations of sanctioned or perceived knowledge sources can also stabilize interactions and foster a local coherence of meaning (Gupta et al., 2016). Local coherences are in situ attempts to reason and make meaning through interaction.

The drawings offered static glimpses into preservice teachers’ perspectives, while the recordings helped flesh out how those perspectives formed through interactions. The analysis examined moments of negotiation as the participants wrestled with ideas in forming collaborative representations of figured worlds of inclusion and disability.

**Analysis of Interviews**

Focus group and individual post-practicum interviews with the participants were fully transcribed, and I coded them using the storylines established from the individual drawings as a baseline (i.e., collaboration, community, accommodation, agency, emotion, systemic inclusion). I revised the storylines to reflect how the participants described inclusion and disability following practicum. For instance, the storyline from the individual drawings Collaboration: Teachers and Students Should Support and Learn From Each Other shifted to Collaboration in the Field: We Have to Know Each Other to Collaborate based on the interviews. I examined how the participants enacted inclusion and how they socially negotiated inclusion in real-world contexts.
As with the individual drawings, I analyzed the interview data as broad storylines rather than direct comparisons between the drawings and practicum experiences of individual participants. My interest was in the participants’ literal narratives of their practicum experiences and the implied storylines conveyed in their descriptions of inclusion and disability, which together characterized their understanding of figured worlds of inclusion and disability. As with the drawings, I looked for how the participants described people, roles, actions, behaviours, and environments in discussing what they believed was or was not part of inclusion.

**Integrity of the Study**

The trustworthiness of the study and resulting findings were addressed with three criteria: credibility, transferability, and confirmability (Lincoln & Guba, 1985). Credibility reflects the congruency between the findings and reality (Merriam & Tisdell, 2015). I strengthened credibility by collecting multiple types of data to cross-reference the findings across multiple sources (The Design-Based Research Collective, 2003) while also offering a textured view of how the preservice teachers’ perspectives evolved and manifested in different forms. While DBR does not subscribe to traditional notions of findings being replicable or universally generalizable, DBR is interested in generating contributions to theory and practice that support the betterment of the field and praxis (Brown, 1992; McKenney & Reeves, 2012).

To enhance transferability, I included detailed descriptions of the research context so readers could better consider applying the findings to other contexts (Merriam & Tisdell, 2015). Recordings of the representation activities and focus group interviews, along with the other data sources, offer in-depth descriptions of the study and how the findings were developed. Confirmability is concerned with consistency in how the findings are determined and make sense to an external party (Merriam & Tisdell, 2015). Collecting multiple data sources over time gave
a traceable line of inquiry leading to the findings. This was bolstered by the ecological validity of situating the study in a real-world context over multiple phases, allowing different cohorts of laboratory instructors and preservice teachers to engage in the representation activities (Cobb et al., 2003; McKenney & Reeves, 2012).

**Delimitations and Limitations**

There were five key delimitations of my research. First, the research was oriented within one course at one university in Canada. Second, students taking the online version of the course which was offered concurrently to the face-to-face version were not part of the study. Third, grades or assessments were not collected or considered for the analysis. Fourth, I did not observe the participants in their field experiences and relied on their accounts of their experiences.

Fifth, I excluded representations where the primary focus was not about disability (e.g., cultural diversity) from the final data set. The course addressed inclusion at a broad level to consider multiple forms of diverse learning needs (e.g., English language learners, trauma, disability, and mental health). While most preservice teachers addressed disability in their representations, some referred to other forms of diversity such as culture, gender, or English language learners. For consistency with the research context and the representation task, I use the figured world of inclusion as an umbrella term with a focus on disability for this analysis. I retained drawings that focused on disability and noted other forms of diversity for the analysis, since separating data fragments that exclusively addressed disability would have been impractical.

I identified five limitations to my research. First, since the representation activities were integrated within the course, existing course structures, such as scheduling, the length of laboratory sessions, and course content dictated the data collection procedure. As well, the IPP
and UDL lesson plan assignments were developed independently of my research. Consequently, the data did not strongly align with the research questions and was excluded from the analysis. Further, I acknowledge the tension in using DBR to implement a novel learning innovation alongside existing course content that may not be fully compatible.

Second, a team of instructors led the laboratory sessions for non-video participants, so there may have been variations in how instructors did the representation activities with preservice teachers in their section(s). I trained the instructors on the activity in advance to improve consistency. The same research assistants facilitated all the video-recorded sessions, which I then analyzed and present in this dissertation.

Third, the participants’ drawing skills may have limited their ability to convey their ideas through representations. By design, I offset this by having participants include written descriptions of their representations and by following up with clarifying questions during the focus group interviews. As well, the analytical framework pertaining to visual grammar did not depend on levels of skill or expertise in creating drawings.

Fourth, Holland et al. (1998) studied figured worlds primarily through ethnographic methods over extended time periods. The timescale of my data sources was relatively short, and I did not directly observe the participants enacting inclusion. The representations are limited in showing static snapshots of figured worlds, but as argued by Kress and van Leeuwen (2021), visual representations can convey much about a drawer and the associated context.

Fifth, the pilot and dissertation phases of the study involved partially different teams of instructors and different cohorts of preservice teachers, which may have impacted how the tasks were implemented and taken up from year to year. At the same time, this can be a strength of the design in being applicable to different groups of people. Further, “no design can specify all the
details” (Collins et al., 2004, p. 17) and the effectiveness of a design may change in a different context.

**Ethical Considerations**

My research adhered to protocols and policies outlined by the University of Calgary Conjoint Faculties Research Ethics Board. The risks to participate were deemed minimal as the research occurred as part of regular class activities, except for the focus group interviews and the location of the video recordings. I kept all data confidential and participation was voluntary.

To minimize the impact on non-participants, video recordings of the representation activities took place in a separate location where preservice teachers could opt-in to being recorded and participating in the study. The recording sessions were scheduled at the same time and were otherwise identical to the non-recorded laboratory sessions. Since the representation activities were done in groups, anonymity could not be guaranteed, but participants were asked not to reveal the identities of other participants.

Since I was also a laboratory instructor for the course, I delegated recruitment and video data collection to a third-party proxy. The proxy retained the consent forms, raw data, and identities of the participants until after the course was completed.

**Role of the Researcher**

I came to my research as someone diagnosed with a learning disability. As I was only diagnosed during my undergraduate degree (BSc, Physics and Astrophysics), I faced many questions about why I seemed to excel in some aspects of school and struggled in others when I was a child. The challenges I experienced as an undergraduate student fuelled my pursuit of graduate work in education. My master’s research explored the narratives of how students with visual impairments experienced postsecondary education and how technology shaped those
experiences (Ostrowski, 2016). From the findings, I found many parallels between the participants’ experiences and my own in navigating the education system to organize supports and accommodations, learning strategies to overcome barriers, and wading through the social ramifications of being considered different. Many of the research participants noted a range of experiences with teachers and instructors, with some being highly supportive and others less so. Knowing how critical educators’ perspectives were in fostering inclusion, I was motivated to pursue my research to understand how such perspectives form.

The combination of my experiences and direct involvement with developing and implementing the representation activities inherently shaped my approaches to the study and interpretations of the data. Acknowledging how my experiences and dual-roles as researcher and laboratory instructor coloured my interpretations of the data has been crucial to fortifying the rigour of the study. As noted, using multiple and rich data sources, consulting with my supervisors, and being explicit about my perspectives has helped strengthen the findings and their relevance to the broader scholarly community.

Summary

My research used a design-based approach to implement a set of representation activities, where preservice teachers created drawings of inclusion. They created individual drawings and, later in the course, collaborative drawings. These sessions were video-recorded. After the course, the participants completed a four-week practicum placement and were invited to an interview to investigate their experiences of implementing inclusion in the real-world classrooms.

I used three forms of analysis. First, the drawings and descriptions were analyzed to develop storylines about typical characters, actions, relationships, and perspectives that made up figured worlds of inclusion and disability. Second, I conducted an interaction analysis of the
group drawing task to examine how the participants engaged in social negotiation as they
represented figured worlds of inclusion and disability collaboratively. Third, post-practicum
interviews were analyzed thematically using the storylines derived from the drawings to explore
how the participants socially negotiated inclusion in real-world contexts. This corpus of data and
analysis offers a textured view of how the participants constructed an understanding of inclusion
and disability in various contexts. The following chapter outlines the findings, organized to align
with the three forms of analysis and chronologically of when they occurred.
Chapter 4: Findings

This chapter is organized into three parts. First, I share the figured worlds of inclusion and disability as depicted and discussed by the participants during the individual drawing task. I grouped the drawings by storylines which I substantiate using the drawing descriptions and occasional excerpts from the video recording transcripts. The storylines, discussed in no particular order, that I derived from the individual drawings illuminate the narratives of inclusion and disability the participants gave salience through the act of representation. Each drawing also reflects the participants’ experiences and/or interpretations of past, present, and/or desired figured worlds of inclusion and disability.

Second, I highlight two groups from the collaborative drawing task to show how the participants discussed and negotiated a shared understanding of inclusion and disability. Through interaction analysis, I examine how the participants brought in, modified, and created ideas to collectively represent an inclusive world. As well, these interactions show which voices and ideas were taken up and which were not. In this section, I take a deeper look into how the participants created their group drawings, supported by recording transcript excerpts, drawings, and descriptions from the group drawing task.

Third, I explore how the participants tried to implement inclusion and address disability during their practicum (field experience). This shows another form of negotiation, where the participants had to reconcile their perspectives and practices within real classrooms while considering school norms, cultures, and the pragmatics of teaching. For this section, I use the interview transcripts to explore how the participants enacted inclusion in their field experiences. I organize the findings using revised versions of the storylines from the individual drawings.

2 Following ethics protocols, names have been replaced with pseudonyms, as applicable.
These revisions reflect the participants’ evolving perspectives as they tried out, modified, and discarded storylines of inclusive worlds.

**Figured Worlds of Inclusion and Disability**

The participants initially had to create individual drawings of inclusion. The participants’ representations were diverse but also recognizable. The details of these similarities and differences played out in the storylines which sometimes overlapped and other times were disparate depending on how each participant understood their version of an inclusive world. The participants’ storylines of inclusion and disability addressed how people interacted or learned together (collaboration), shared sensibilities among a group of people (community), supported individual needs (accommodation), gave choice and opportunities for action (agency), invoked feelings (emotion), and expanded beyond the self (systemic).

**Storyline 1.1: Collaboration: Teachers and Students Should Support and Learn From Each Other**

The collaboration storyline is about how students and teachers engage in education together. In the drawings and descriptions, this ranged from students collaborating on learning activities to exchanging ideas and perspectives. Sara’s drawing (Figure 3) and description passively implied group work was a good idea but without indicating why or how it fostered inclusion.
Figure 3

*Sara’s Individual Drawing: Embracing Differences*

*Note.* A classroom showing students and a teacher, as well as accommodations and furniture to support different learning approaches and needs. Panel A: Two students near a cluster of desks in front of a drawing on the desks. Panel B: A group of students standing around blocks.

Panels A and B show clusters of students near an image and blocks, respectively, suggesting the students were collaborating on tasks.

[Colours] represent the idea of visible diversity. I tried to represent different learner groupings (teacher-led, peer-discussion, solitary work, mentor pairing) as well as multiple physical resources … to support learning, behavioural, and emotional diversity…. These included … physical environment supports … such as grouped desks, independent learning environments…. In an inclusive classroom all learners are supported, leading to greater security and confidence both in social interactions and the learning experience. (Sara, drawing description)
In this excerpt, group work was among the menu of options but there was little indication of who would do group work or how students were grouped, such as depending on their needs or social dynamics. Examining the drawing, the placement of people and elements suggest this is a snapshot of a class in action rather than static elements (Kress & van Leeuwen, 2021). For instance, the student in the top right corner is reaching toward the board, the clock conveys the passage of time, and similarly, smiles could be a response to something happening.

Each individual or group of students appears to be doing a different task, suggesting this could be a working period where students worked on various tasks, though it is unclear if the tasks are related (e.g., learning about shapes through different modalities). The drawing suggests a narrative of students collaborating using shared resources. In Panels A and B, students are clustered around shared objects, and in Panel B, students are depicted as smiling, implying enjoyment while doing the activity. The students around the edges of the classroom, placed individually, as well as the students in Panel A, have no facial expressions. Taken as a representation of a figured world, the mixed presentation of known and unknown emotions implies appearing to smile was assigned less significance than other elements of the overall narrative conveyed. In other words, showing all people as smiling was not the highest priority for Sara, nor was happiness or enjoyment mentioned in the drawing description.

In addition, there is a hierarchy between people in Sara’s drawing. Sara drew the teacher much larger than students, in traditionally masculine apparel, and as the only person to have a body depicted by more than singular lines. These combine to establish a superordinate and subordinate relationship between the people (Kress & van Leeuwen, 2021), such as in terms of power, expertise, or role. Panel A similarly shows one student as larger than the other, perhaps
depicting Sara’s idea of “mentor pairing” where the larger student is mentoring the smaller one, who is further distinguished by colour.

Compared to Sara’s more general notion of collaboration, Laura was an exception among the participants in specifying how students might be grouped together (Figure 4):

The longer arrows represent the students who need a little bit of extra help…. The shorter arrows represent the ‘high flyers’ who learn quickly, or who learn in a similar way as the teacher. The connected arrows represent the students who learn in a similar way and could be grouped together…. Each of our students is connected in the classroom, and although they each learn in different ways and need different supports, they each deserve to be attended to and everything they bring to the table should be appreciated. On the [chalk board], I represented a circle of the students with double ended arrows connecting them each together…. Their learning is all interconnected,… and that one student’s successes or failures may impact the successes or failures of the other students in the room. (Laura, drawing description)
Note. A teacher and students with arrows to show interconnections. Panel A: “We will know that inclusive education has really become embedded in our culture when the term becomes obsolete.” Panel B: “As teachers, as educators, as safe places, as caregivers, we MUST make every single student know that they are valued, important and heard, no matter how they learn, how they know, and who they are.”

Laura described two forms of relationships. First, as an interconnection at a metalevel: “learning is all interconnected.” Second, “students who learn in a similar way” are grouped. Laura positioned relationships in terms of similarity between students and similarity between the teacher and students. This figures inclusion as a process of the teacher situating students along a continuum of ability, depicted by arrows of varying lengths, relative to the teacher. In this way
collaboration is shifted from being between students toward being between the teacher and students, with the teacher as the central node in supporting diverse needs. At the same time, Laura acknowledged the connections between students in their comment about one student’s success or failures impacting other students.

As with Sara, Laura’s drawing gives salience to the teacher by drawing them larger than students and with a facial expression and hair. A hierarchy is fortified by the top-down composition (Kress & van Leeuwen, 2021) of the teacher and students, and by the arrows flowing out of the teacher to students. The drawing also emphasizes inclusion as a matter of addressing students that need “extra help” by omitting depiction or description of other aspects of disability and inclusion. Further, the classroom environment or resources to support inclusion are unspecified. Laura contrasts Sara’s representation of a figured world by placing focus on grouping students independent of the physical context. In Kress and van Leeuwen’s parlance, Laura did not convey the classroom environment as an active participant of inclusion in the representation.

Often, the participants represented group work as clusters of individual student desks and occasionally as larger desks shared by several students (see Figure 3, Figure 5). This type of clustered arrangement conveys, 1) an assumption that many schools use a traditional one-student-one-desk model and teachers make a deliberate effort to move furniture into desired groupings—pushing against a design that assumes learning is predominantly individual; and 2) the participants defaulted to reproducing past experiences and observations (e.g., practicum, their schooling). Clusters of individual desks are a common, recognizable symbol of collaboration—a longstanding, socially negotiated part of how classrooms are figured and designed (Boys, 2015).
Sam’s use of squared edges, boxes, and grids in Figure 5 (Panel A) implies group work as a structured process occurring in a structured environment. This contrasts Panel C which uses curved lines, colours, and music notes to convey the conception of inclusion as “harmonious chaos.” The left side of the drawing promotes a figured world with an outward appearance of inclusion as structured and while acknowledging an internal sense harmonious of chaos as shown on the right side. This blends the perceptual with the conceptual (Kress & van Leeuwen, 2021), where Panel C conveys the concepts and ideas underpinning what is perceived in Panel A. The left-right split also aligns with the convention of having what is known or familiar on the left and having what is novel or less apparent on the right (Kress & van Leeuwen, 2021).
Note. Panel A: A classroom with furniture arranged to facilitate individual and group work. The ear, face, and hands represent modes of learning (auditory, visual, kinaesthetic). Panel B: An out-of-classroom learning environment. Panel C: The faces, colours, and music notes represent a harmonious chaos of what inclusion could look like.

Sam described clustered tables as part of inclusion where students could opt-in to collaborative or individual depending on their preferences. This notion of student preference characterizes inclusion as giving students agency in how they learn through collaborative or individual learning. This contrasts Laura, who positioned collaboration as a more teacher-initiated approach. Sam and Sara showed diverse students being grouped while Laura grouped similar students, yet each represented inclusion. The latter approach signals a storyline of grouping to optimize learning which, given Laura’s teacher-initiated approach, suggests a more
efficiency-oriented implementation of inclusive practices and use of resources. Grouping diverse students suggests a focus on social inclusion, but the drawings gloss over the feasibility and logistics of how such a strategy might look in practice.

Melanie also used furniture arrangements to signal collaboration (Figure 6). Uniquely, Melanie depicted a specific narrative scene with dialogue among the teacher and students showing the moments leading up to, and during, collaboration. Compared to the strategies of grouping diverse or similar students, Melanie took a hybrid approach. Panels C and D show a mix of students with diverse and similar outward appearances and needs working together. Further, the dialogue shows the students as having choices and agency in whether they worked together. This more literal depiction of collaboration acknowledged the social dynamics that shape how the collaboration storyline could play out.

Similar to Laura, Melanie’s drawing deemphasizes the physical attributes of the environment, with Panel A drawn on a smaller scale and showing a few resources in an otherwise sparse environment. As with the teacher appearing larger, Melanie drew a student in a wheelchair larger and foregrounded relative to other students, giving the wheelchair user salience. The explicit and detailed dialogue support this drawing as an attempt to portray a realistic scene, which Melanie confirmed as being influenced by “examples that I actually saw in classes” (drawing description).

As a figured world, Melanie set up assumptions about the teacher and students. In this world, the teacher exclaims a reminder of an upcoming quiz (Panel B), possibly responding to a history of students as being forgetful or assuming students did not track upcoming events. There is also a remedial component to the teacher’s dialogue when they mention calling up students to discuss what they did “wrong on the last test” and assigning homework to “improve their grade.”
This conveys a tension between a deficit perspective toward students’ organizational and performative abilities while simultaneously conveying a positive perspective of students as considerate of their peers’ desires to collaborate on tasks.

Figure 6

Melanie’s Individual Drawing: Choosing to Work Together or Alone

Note. A teacher and students in a classroom. Panel A: Clockwise from top-right, “Couch,” “mood lighting that can be adjusted, comfy seating,” “a couple desks,” “moveable chairs + tables,” “laptop/Chrome books,” “Carpet,” “Teacher desk.” Panel B: From top to bottom, left to right, “Remember class! There’s a quiz coming up this week! I’m giving you time to prepare + ask questions.” “I’ve got practice questions on paper, there’s a practice test online and you can look through problems we’ve worked on in class.” “Oh! And while you work, I’ll be calling up students to talk about where they went wrong on the last test + give them a homework to try to improve their grade.” Panel C: From top to bottom, “Hey! What did you get for #3?” “3x²,” “Okay good me too,” “Wanna work together on the worksheet?” “No thanks, I’d rather work alone,” “Okay, cool.” Panel D: From top to bottom, “Hey! Can you help explain this? I don’t really get it,” “Sure! Can you read the question to me?” “Sure!”
Going beyond the physical aspect of grouping students, Kelly (Figure 7) took an abstract approach to show students creating art together where collaboration meant a “shared learning environment, where every individual has something valuable to contribute” (drawing description) to the learning and experiences of one another. The pencil-drawn circles represent students working together on an art project, which is encompassed by “a colourful circle with two triangles, one coming into the circle and one going out. These represent many perspectives and the sharing of information in and out of the classroom” (Kelly, drawing description). Kelly also portrayed another type of collaboration that underscored a diversity of perspectives and ideas instead of diversity in terms of physical or academic abilities—the exception being their depiction (Figure 7, Panel A) of “a student who required a longer brush to paint with, to show the normalization of accommodations and equitable treatment of all students” (drawing description). Also unique to Kelly was showing collaboration at a class-wide level rather than as pairs or small groups of students.

The overhead perspective and abstraction of people positioned the drawing as conceptual (Kress & van Leeuwen, 2021), where the idea of collaboration supersedes the details of a specific scene or practice. Using colour to depict the artwork and assorted colours for each person’s contributions emphasizes their uniqueness and how they combine. The saturated colours also portray a figured world where the flow of information in and out of the space and how students use that information together is a priority, while depicting students as pencil drawn, sketch-style circles abstracts the details of the students.
Figure 7

*Kelly’s Individual Drawing: Everyone has Something Valuable to Contribute*

*Note.* A shared learning environment where students, depicted as small circles, work together on an art project. The triangles bisecting the large circle represent perspectives entering and leaving the classroom. Panel A: Student using a longer brush to paint.

The collaboration storyline appeared in many drawings but differed in subtle ways. How or why students were grouped reflected different priorities of figuring an inclusive world. The grouping of students with diverse attributes suggested students could benefit or learn from each other and that having a disability should not preclude collaboration or interaction among peers. Conversely, grouping students with similar characteristics pointed to a storyline focused on teacher efficiency. As well, Kelly’s storyline of collaboration considered a whole-class
perspective and the melding of perspectives and contributions to benefit everyone. The drawings in this storyline achieved the conjecture of showing ideas in ways beyond just text, showing relationships between people and objects, and in Kelly’s case, expressing ideas in a more abstract form.

**Storyline 1.2: Community: There Should be a Sense of Belonging**

Among the 32 individual drawings and descriptions, only one participant explicitly mentioned community. I include Figure 8 because the participants mentioned community in 13 of 18 group drawings and in 12 of 19 interviews. A possible reason for the higher uptake in the term for the group drawings is that community was part of the UDL principles which the plenary instructor discussed in the lecture the same week as the task, although the reason is less clear for the interview data.
Note. A tree of inclusion conveyed through five key words (success, support, talent, diverse, celebrate) which are rooted in support from teachers, family, and community.

Gloria listed five key elements of inclusion (success, support, talent, diverse, celebrate) as part of the branches and leaves of a tree and labelled the roots as teachers, family, and community: “Students should feel part of the classroom community and not left in the limbo of a half-effort/forced sense of inclusion; it should be authentic and genuine” (drawing description). Unfortunately, Gloria did not offer details of how community could manifest, suggesting community was more of a feeling or nebulous aspect of inclusion, rather than a tangible or observable practice. In examining the drawing, the upper portion of trees and branches depicts an
inclusive environment but does not appear to contain a teacher. Instead, teachers, family, and community are connected to the environment but as roots. Both metaphorically and as illustrated, the roots are hidden beneath the surface and support the growth above. This, combined with the use of colour in depicting students, conveys a figured world where students are emphasized while teachers, family, and community are less prominent and work together in service of supporting students, as suggested by the trunk represented as hands. The composition also aligns with conventions of having the ideal or focus of an image in the upper portion with the given or prerequisite information in the lower portion (Kress & van Leeuwen, 2021). Gloria did not render or detail the teachers, family, and community but positioned them as an “essential” starting point “in the growth of creating an inclusive environment” (drawing description) above it.

**Storyline 1.3: Accommodation: For Every Need, There is a Tool**

The accommodation storyline conveyed inclusion as resources or tools to support student needs at an individual level. This storyline recognized and accommodated individual differences to allow students to participate in learning activities. Adaptation was the goal, either by adapting content, difficulty, pacing, or using specialized supports to improve accessibility for each student. Commonly, the participants referenced a range of assistive technologies and practices to support individual student needs.

Alina (Figure 9) presented accommodations as a menu of resources students could select from to support their needs and enact inclusion with physical tools and resources. Alina explained trying to “depict a variety of students with different needs…. I wanted to show that they were all learning in the same space, together, but in ways that worked best for each of them as individuals” (drawing description).
In terms of composition, the centre of the drawing (Figure 9) is empty. No teacher is present and all the students are of a comparable size and detail, suggesting equal attention to each person but no central force or person. Alina also emphasized inclusion as accommodations by showing each person using a different tool. The spatial arrangement of objects and people within a depicted scene characterizes a social practice (van Leeuwen, 2008). In this drawing, each student is shown working “as individuals” (Alina, drawing description) and relatively spaced apart, suggesting collaboration or interaction was not a priority in this representation of a figured world.

Curiously, little in the drawing resembles a typical Grade 3 classroom. The size and features of the students appear older—perhaps teenage—than a Grade 3 aged student. The classroom itself also lacks colour, posters, student work on the walls, toys, or general indications of a children’s learning environment. The prominent use of rectangular shapes such as in the door window, furniture, and blocks also emphasizes a structured approach (Kress & van Leeuwen, 2021). This more sterile presentation further implies that, for Alina, depicting accommodations was of greater priority relative to conveying a realistic Grade 3 classroom or other aspects of inclusion and disability.
Note. A Grade 3 classroom showing students using various accommodations and resources such as a computer, an audiobook, seating, and blocks. Text on the wall: “Welcome to Grade 3.” Accommodation as a menu conveyed a mechanical relationship where inclusion was achieved through the matching of tools to needs. In some circumstances, such a linear approach may be adequate, but it also limits the scope and meaning of inclusion and disability. Characterizations of inclusion as accommodations also signals the systemic structures around responding to student needs. Since accommodations and assistive tools are typically tied to individual needs, they must often be specially requested which is mediated by an extensive process to pinpoint a student’s
needs, assess eligibility for support, and allocate resources/funds to procure supports (Bateman, 2011).

Fiorella (Figure 10) took an especially pragmatic approach by describing the matching of accommodations with student needs “to make learning as efficient as possible” (drawing description), which framed learning as a performative process. Like other participants, Fiorella noted the pragmatic tensions and complications of accessing resources, such as limited funding: teachers “must have total support from their administrators and school boards. This is so that they have funding for access to the tools needed” (drawing description). Both Fiorella’s description and drawing suggest a formulaic relationship between learning needs, accommodations and supports, and the student’s understanding of content—coincidentally, the math equation in Panel B, shown in larger font and surrounded by a thick border, further reinforces a metaphor of formulaic inclusion.

Several aspects of the drawing cast a traditional perspective of figured worlds of inclusion and disability. The layout follows a left-right composition, where Panel A depicts the start of an interaction with the teacher as the source of knowledge and expertise. A vector toward Panel C attributes students’ understanding to using different modalities of learning. Kress and van Leeuwen (2021) characterized this as a given-mediator-new structure, where in this case the teacher’s speech bubble represents given or known disciplinary knowledge of math, the teacher is the mediator, and the students’ understanding is the (new) result of the mediation.
Note. A male teaching math to students using different modalities (visual, auditory, kinesthetic). The hands represent support by the teacher and administration to foster inclusion and meet students’ needs. Panel A: Teacher speech bubble text, “5 + 1 = 6 because addition is increasing one value by another.” Text below the teacher “Admin Support.” Panel B: “5 + 1 = 6.” Panel C: Student speech bubble text “I understand!” Text below the students, “Teacher Support.”

Another idea that feeds into the accommodation storyline is the notion of “learning styles.” Despite being highly contested (An & Carr, 2017), the idea of catering teaching practices to a student’s preferences was a common part of educational discourses for many decades, likely when many of the participants were in K-12 schooling themselves. Throughout the drawings and descriptions, participants frequently discussed considerations for auditory, kinaesthetic/tactile, and visual learners regardless of whether a student had specific diagnosed or identified needs.
For example, Sam (Figure 5) described\(^3\) considerations for “visual smarts, auditory smarts…, [and] nature smarts…. A lot of students need to be tactile, they need to be touching things, they need to be manipulating objects” (video transcript).

Like other participants, Sam and Fiorella’s attempts to match a learning approach to a student conveys a narrow storyline of accommodations, one they likely inherited from their experiences or observations of schooling. Sam’s perspective was still evolving, admitting that prior to the BEd program, “I had very little knowledge on what inclusive education is, I thought it was specifically for students in special education. This little awareness was because I went through K-12 in the ‘regular stream’” (drawing description). Sam’s remark speaks to the process preservice teachers go through in developing a perspective of inclusion and disability as they attempt to draw upon concepts and strategies they witnessed or experienced in the past.

Another common thread of the accommodation storyline was establishing an equitable playing field for students. Lorianne recreated a popular graphic distinguishing equality and equity (Figure 11, Panel C):

The three stick figures are different heights and while many would consider them to be treated equally … the two shorter figures obviously cannot see over the fence. Is it really so much work for us (the teachers/government/society) to build little stepping stools … to ACCOMMODATE the two more disadvantaged figures? (drawing description)

\(^3\) Some instances of “umm,” “ugh,” and “like” were omitted from transcripts for readability.
Lorianne’s Individual Drawing: Defining What Inclusion is and is not

Note. Comparing metaphors of inclusion. Showing differentiated learning and equity versus equality. Panel A: A teacher lecturing to students seated in rows. Panel B: An umbrella representing accommodations for one student versus all students. Panel C: Equity shown as different sized blocks to match students’ needs so all students can see over the fence.

Lorianne’s drawing was a deliberate aversion to the traditional educational practices they observed while teaching in Japan. The composition of the drawing follows the convention of placing what is given or traditional on the left, as in Panel A, and placing what is new or desired on the right, as in Panel C (Kress & van Leeuwen, 2021). The arrows on the drawing further communicate the transition away from ideas and practices in Panels A and B. The red no symbol (circle-backslash) conveys not only a transition away from the enclosed ideas but a blunt repeal
of them. This shows aspects of a counter-world of “what should not be” (Holland et al., 1998, p. 250) to contrast a figured world that ascribes to equity while being aware of, and potentially actively resisting, inequity.

I tried to draw a distinction between what I imagine inclusive learning is NOT and what I think it is…. [In Japan] students were treated as a cohesive whole and individual accommodations … were rare. I saw so many kids left behind. (Lorianne, drawing description)

In the interview, Lorianne clarified cohesive meant homogenous, where students were all assumed to learn the same way. Lorianne’s experiences abroad contrasted what they were learning in the course and that the broader BEd program motivated their drawing.

Several participants commented a teacher was not alone in supporting students. Inclusion was a team effort that incorporated caregivers, administration, specialists, educational assistants, and a broader school community. For example, Tina explained how their drawing (Figure 12) communicated inclusion as a responsive web of supports:

I placed a check mark beside each path as a way of communicating that each journey is valid and should be accepted and fostered in an inclusive learning context. The asterisks … represent moments in each student’s education where supports, resources, and influential people (teachers, caregivers, administration, etc.) … positively or negatively affect a student’s success based on recognizing their unique needs, which are dynamic and require responsive educators. (drawing description)

In this excerpt, the teacher is part of a network of supports that go beyond specific tools and accommodations to broader support structures for dynamic student needs. Tina represented teachers and other supports as asterisks and depicted students as people, signalling a student-centred perspective. The students are of similar size and multicoloured to show visible and invisible differences. Panels A and B follow a left-right separation, where the left references what is given (i.e., diverse students) and the right shows a projected future and what is desired (Kress & van Leeuwen, 2021). The left statically shows the salient characters (i.e., students) of the world, while the right shows possible narrative vectors of how various forces in the world—
in this case, teachers and supports—interact with the characters (Albers, 2007; Kress & van Leeuwen, 2021). The narratives in Panel B also show how teachers and supports interact with students repeatedly over time during the ups and downs of their experiences.

**Figure 12**

*Tina’s Individual Drawing: Infinite Paths to Success*

Note. Various pathways and supports for students’ needs. Panel A: Text, left to right, “visible differences,” “invisible differences.” Panel B: Text, top to bottom, “entry points for support,” “all learner pathways are unique and accepted, they are not better or worse,” “learner pathways/depictions of success.”

Nicole depicted a range of inclusive scenes (Figure 13). In addition to noting specific accommodations such as furniture, automatic doors, and multimedia, Nicole described (Panel E) the teacher looking for students’ strengths and listening to students’ perspectives and concerns. This conveys a figured world where the teacher and students engage in dialogue around understanding each other’s needs and using accommodations.

The drawing represents a world predominantly from the perspective of a teacher and their practices and role in fostering inclusion. The enlarged size and detailing of a teacher’s head in Panel E communicate this drawing as being from the teacher’s perspective. Only Panel C
appears to show a student, although it is uncertain as Nicole did not label all the people.

Compared to other drawings, such as Figure 10 by Fiorella, the composition and text deviates from presenting accommodations as tools for performative aspects of learning. Fiorella was clear in tying resources to understanding. In contrast, Nicole focused on fostering an inclusive atmosphere to foster feeling welcomed, proud of student work, and celebrating differences.

**Figure 13**

*Nicole’s Individual Drawing: Inclusion Comes in Many Forms*

*Note.* Scenes of ways and resources of an inclusive environment. Panel E: Clockwise from top, “[The teacher] sees each student as deserving of an education; looks for the positive [e.g.,] strengths-based approach; listens to students’ ideas, concerns; listens for situations where they can help; listen to opportunities where they themselves can learn and improve; uses inclusive, respectful, person-first language, encourages students to do this as well; speaks kindly giving
constructive criticism; advocates for students’ recognizes differences and celebrates them; keeps an eye out for students in need.”

All the drawings aligned with the accommodation storyline included an array of resources and tools to support students’ needs. Where they varied were in the relationships between students and the tools and between the students and the teacher. This ranged from accommodations as a static menu of tools students could use, to broad references to accommodations to foster equity, to hybrid offerings of tools as part of an ongoing dialogue between a teacher and students.

**Storyline 1.4: Agency: Empowering Students to Take an Active Role in Their Learning**

The agency storyline acknowledged students’ diverse identities, interests, and abilities and enabled students to take an active role in how they learned. In the drawing data, agency often complemented accommodations by offering an array of resources (e.g., varied seating, media, assistive technology) students could select from. For instance, Alina described options for where and how students learned (Figure 9):

One [student] is reading in a more comfortable chair, because he prefers to read there…. This guy likes to read lying down…. These guys didn’t want to read. They needed to chat rather than read and work by themselves…. She prefers to sit at her desk, and this one just couldn’t do this activity there, she couldn’t work on that, she’s been playing with some blocks while working on a different activity. (video transcript)

Notably, this example omitted the teacher; students had free rein in what they did, going as far as having a student not doing the same activity as others. However, suggesting a student do something else because they “couldn’t do this activity” implies the activity itself was not accessible or inclusive. This segregation is fortified by the positioning of the student deemed unable to do the activity in the bottom right corner (Figure 9) and looking away from other students.
The agency storyline also addressed students’ interests and identities. As Megan described (Figure 14), “Giving children more than one possibility by adding pathways with different courses and career options…. Inclusive education allows all students to pursue their dreams and interests, no matter who they are or what kind of ‘problems’ they have” (drawing description). Megan tied agency to students’ broader educational experiences and saw the teacher as someone who opened doors to “endless possibilities and futures” (drawing description). However, Megan also coupled agency to the relative power attributed to students and the teacher. Megan portrayed an assumption that students may have limited power or face barriers preventing them from exercising their agency (i.e., students may be unable to open doors themselves), and the teacher’s role is to enable an environment that empowers students to make choices about their learning.

The drawing (Figure 14) communicates desired and undesired attributes through colour and composition. The undesired aspects are shown in bold, all-capital lettering floating in a “dark world” (Megan, drawing description) around the doorway, while the inclusive world is shown in bright colours, with the door emanating beams of light. The door is also centred in the drawing with a head-on perspective, both of which signal the world beyond the doorway as desired, important, and inviting. The head-on perspective (versus an oblique or angled perspective) suggests a world that the viewer can be part of rather than the world of someone else (Kress & van Leeuwen, 2021). There is also a narrative vector conveyed by the pathways. The lower pathway depicts common school subject areas such as biology, chemistry, mathematics, acting, and music. The cap and tassel at the centre of the upper pathway signals a progression to graduation, which stems to careers such as astronaut, vet, actor, and athlete. Notably, this
rendition shows a world where inclusion leads to many careers traditionally considered prestigious in popular culture.

**Figure 14**

*Megan’s Individual Drawing: Opening Doors for Students*

Note. A doorway held open by the teacher from a dark world to a bright and welcoming environment where students can pursue their dreams and interests. Text surrounding the doorway, clockwise from top, “Stupid, lonely, doubt, no one cares, useless, fear.” Text inside the doorway, top to bottom, left to right, “Astronaut, Vet, Teacher, Actor, Writer, Police, Athlete;” “Bonjour!, Hola!, Hello!, Ciao!, Salve!”

Vikesh also extended agency beyond selection from a menu of resources to student agency in defining their goals, curricular or otherwise (Figure 15):
A group of people considering different options to ascend to another level. The higher level can refer to higher learning, a comfortable life, etc…. Whatever an individual considers their goal, or “success.”… We need to be aware of the different circumstances our students come from, and we need to facilitate their learning so there are always multiple paths then can choose to take. (drawing description)

Vikesh fostered a sense of agency in both students’ creation of goals and their means to achieving them. Vikesh’s description and drawing composition define success as an ascent.

Hinging inclusion on ascent figures a version of inclusion that precludes experiences of failure, traversal, descent, or simply stability. As McWilliams (2016) argued, a focus on progression limits the experiences and learning that are valued and acknowledged, and it restricts inclusion and disability to specific narratives. Further, the vertical hierarchy suggests students at the lower level are worse-off than those at the higher level. Such metaphors and associations have real consequences and underpin much of the past and present approaches to supporting student needs. For example, developing specific and measurable performance goals are key features of an IPP and dictate how and what supports and resources are made available to students (Bateman, 2011).
Figure 15

_Vikesh’s Individual Drawing: Ascending to Another Level_

*Note*. Different pathways for people to ascent to another level of learning, life, or another goal.

The participants often conveyed agency as a way to empower students in selecting resources and tools to support learning. For some participants, agency referred to broader choices in students’ academic pursuits over the long term of schooling. The participants often described teachers as facilitators of student agency, but there lacked specificity in how students exercised their agency. Several participants touted a storyline of empowering students and being inclusive of their needs but glossed over how students would know to make effective choices about their education.
**Storyline 1.5: Emotion: Inclusion is a Feeling**

For the participants, inclusion was not only about how it looked but how it felt. In the emotion storyline, inclusion often meant happiness represented as a simple smile or heart. Happiness or positive emotion was also used to tell a contrasting story of negative emotions outside of an inclusive environment. For instance, Megan (Figure 14) described inclusion as opening doors so “children won’t live in a dark world” (drawing description).

Podry (Figure 16) tied inclusion to emotion by depicting a sun made up of students (represented as puzzle pieces) to show that “together, we create something beautiful, a sense of warmth, happiness, where everyone belongs, and everyone’s pieces are needed to complete the whole” (drawing description). The combination of a feeling and beauty conveys inclusion as an aesthetic experience and a coherence of desperate elements. The feeling Podry described was incomplete without the unique contributions of all students. This notion of inclusion avoided a clearly defined method or practice, and instead favoured a feeling of inclusion.
Figure 16

Podry’s Individual Drawing: A Sense of Warmth, Happiness, and Belonging

Note. Puzzle pieces arrange to form a sun to represent feelings of warmth and happiness.

Sam also expressed inclusion as a feeling (Figure 5) by positioning the teacher as key in establishing a positive environment:

With the EAs [Educational Assistants] and the teacher, I drew a brain and a big heart because I think for inclusive education to be practiced in the classroom, [it] needs to be … rooted in beliefs and values of the teacher … that all learners could achieve. (video transcript)

As Gutiérrez Pérez (2008) explained, “the heart is a container of emotions” that “characterize[s] human relationships” (p. 31). Sam also associated hearts with “the importance of relationship-building when it comes to inclusion” (interview transcript).
Sam referenced multiple expressions of emotion (Panel C) related to an inclusive environment: “It is harmonious chaos, there is confusion, excitement, frustration” (drawing description). Sam was one of few participants that acknowledged inclusion did not necessarily look like or require a persistent environment of all students being happy and working together. Harmonious chaos implied that nuances might not always look like the ideals, but the overall environment embodied a net-positive feeling of inclusion. Sam’s version of inclusion was not sterilized to only highlight ideals but instead couched inclusion within the practical realities of a day-to-day classroom.

Jason similarly reinforced inclusion as part of the broader environment and included a motivational poster in their drawing that said, “hang in there” (Figure 17, Panel B). Jason felt “having a thoughtful and meaningful environment plays a part in the students’ education as well” (drawing description). While subtle, the poster suggests considerations for emotional well-being and self-regulation and, like Sam, acknowledges that students could face periods of challenge but are encouraged to persist and persevere. As van Leeuwen (2008) argued, such posters are not merely decorative objects but symbolic indicators of recognizable spaces that normalize the practices depicted within them. In other words, they communicate inclusion occurring in “regular” classrooms and not in separate or unfamiliar spaces.
Seven participants noted love or depicted hearts in their drawings, but they only described love at a high level, if at all. For example, Spencer gave passing reference to love in service of students helping “fill each other’s needs and make sure everyone’s learning is full, and ‘colourful’” (Figure 23, drawing description). Alex similarly mentioned love as part of inclusion but tempered this ideal with a disclaimer: “of course, not everyone will get along, but it is important to try” (Figure 18, drawing description). Despite being a foundational aspect of inclusion, how these symbols might be enacted in practice was unclear.
Figure 18

*Alex’s Individual Drawing: Diversity is a Strength*

*Note*. Students being valued regardless of their differences, which ultimately make the group stronger. Text, clockwise from top, “coded disability,” “English as a second language,” “Indigenous,” “coded gift[ed]ness,” “immigrant,” “differently abled,” “no matter the difference, everyone is valued, included, accepted, and loved.”

A common indicator of the emotions in the drawings were smiling faces. Among the 26 drawings where people were depicted with facial features, 15 included people smiling and 11 had people without facial expressions. Rarely did participants specify a reason for why a person might smile, but these could sometimes be inferred such as in Figure 19 where a student in a wheelchair playing basketball included a thought-bubble saying “I [heart symbol] Basketball!” (Figure 19, Panel A).
Figure 19

Samantha’s Individual Drawing: Inclusion Happens at Many Different Levels

Note. Various scenarios and implementations of inclusive practices such as in a classroom, playing sports, and at home.

Most often smiles passively implied people in an inclusive environment would be happy. Likely, many of the smiles drawn were a function of the figured world of drawing, where smiles in drawings—and similarly photographs—signal a desired appearance or emotion (van Leeuwen, 2005).

Figure 20 was an exception to the prominence of smiling faces, depicting a scene Jesse observed during a previous practicum where a “gifted” student had a little meltdown when he wasn’t able to understand a math concept. Instead of forcing him to stay seated and work through
it, the teacher let him take a walk in the hallways to calm down” (drawing description). This encounter shed light on another aspect of emotion where frustration or anger were acknowledged as valid emotions and inclusion meant supporting self-regulation practices.

Additionally, as van Leeuwen (2008) pointed out, “assigning functions and meanings to space and spatial arrangements … [is a] form of social control” (p. 97) that assigns significance to processes and practices. Figure 20 shows a boy hunched over a desk, “struggling to write” (Jesse, drawing description) while seated on an exercise ball as an accommodation. Meanwhile another student, seated in a chair, is positioned upright looking toward the teacher and is not described as struggling or using an accommodation. These signal contrasting associations, one being that students with accommodations struggle and another being that students without accommodations sit in proper chairs in proper postures. As well, showing the third student as leaving the classroom conveys that frustration is dealt with outside the classroom. Collectively, these assign significance to space and practice (van Leeuwen, 2008): typical students sit in typical chairs, accommodated students struggle, and hallways are the space of dealing with frustration.
The emotion storyline was less defined than other storylines, perhaps because supports for emotions and feelings are inherently less tangible compared to, say, accommodations. Yet, multiple participants conveyed emotion as part of an inclusive environment. Most often, the participants portrayed positive or ideal emotions, but some, such as Jesse, fleshed out inclusion as also supporting students during moments of frustration or anger. From an analytic perspective, while drawings such as Figure 20 achieved my design goal of conveying a narrative scene with relationships among people and their actions in ways beyond text, it also highlights a constraint.
of the representation approach in that little is known about what occurred before and after the depicted scene.

**Storyline 1.6: Systemic Inclusion: We are Interconnected and Part of Complex Systems at Play**

The systemic storyline took a broader perspective of inclusion and disability that went beyond individual accommodations or specific practices. This storyline considered inclusive systems that sometimes looked messy yet were cohesive: “harmonious chaos” (Figure 5, drawing description). Inclusion in this storyline was the undercurrent of the classroom, school, or community.

Ecological systems were a common analogy for the systemic storyline, such as Robin’s (Figure 21) use of the water cycle as a metaphor to describe inclusion. Robin depicted components of an overall system of inclusion as a series of snapshots of a teacher interacting with students (precipitation) in different ways and moments. The rainbow, combined with the teacher on the ground carrying out the pragmatic aspects of inclusion, aligns with the convention of depicting ideals in the upper portion of a drawing and the practical details in the lower portion (Kress & van Leeuwen, 2021). Robin rendered the teacher with little detail, deemphasizing their physical attributes or appearance while emphasizing the teacher’s actions and tools in fostering inclusion.
Figure 21

Robin’s Individual Drawing: When They are Ready They can Either dip Their Toes Into the Pond or Dive Right in

Note. Systemic inclusion depicted by the water cycle, combining universal design for learning, IPPs, and differentiation. Panel A: Text, “You can’t get rainbows without rain!” Panel B: Text, top to bottom, left to right, “Teacher catches students who need additional support. Be prepared to work hard + push yourself!” “Wheelbarrow = differentiated learning,” “Add to the pond when ready.” Panel C: Text, “Teacher digs the pond,” “Share the load,” “Support from professionals, medical, parents, admin, EAs,” “Bucket = IPP,” “Teacher carefully scoops up students who need an IPP. Add to pond when ready.” Panel D: Text, “Goal: Catch all students. Don’t let them run off into a ditch + flow away. It is messy, but nothing grows without water,” “ripples merge,” “Pond = UDL.”

Figure 21 was also one of the few representations that showed how various components interacted, such as how ripples could merge to represent students coming together to learn and
engage with each other. The circular ripples and curvy pond fortify the organic nature of how the elements interact and are supported by designed tools such as the wheelbarrow and bucket. As Robin described,

Students are the raindrops, snowflakes and, sometimes, [hailstones]. The [teacher] [incorporates] universal design learning (the pond) to provide learning opportunities for all her students. The ripples merge as students learn, engage and share ideas. Sometimes the pond is too big and the students need additional support either through the wheelbarrow (differentiated learning) or a more specific IPP, the bucket. When they are ready they can either dip their toes into the pond, or dive right in…. The teacher is working hard, getting dirty and wet. But you don’t get rainbows without rain so enjoy the adventure. (drawing description)

There is also a humbleness in the teacher “trying to catch as many of your students as possible,” (Robin, video transcript) which acknowledged how a system constantly shifted and evolved. The drawing represented a dynamic and holistic system, where the teacher employed a range of individual and universal strategies to match students’ needs. Robin was unique in recognizing students’ needs and supports could change as their circumstances evolved.

In a related vein, Peter (Figure 22) wrote of teachers creating environments where “all plants are flourishing and have produced flowers as their individual needs and requirements have been met” (drawing description). Straight lines, right-angles, triangles, and geometric shapes signal engineered spaces and a sense of structure while curves and circular shapes indicate organic spaces (Kress & van Leeuwen, 2021). Peter used a hybrid approach by drawing a rectangular window into the greenhouse (a designed environment) to foster the growth of plants within (an organic process). This conveys a metaphor of inclusion as a supportive system but not one that finely dictates the growth of its contents. The plants in Figure 22 are positioned closely, with many overlapping suggesting close interactions among students as their needs are met and they grow.
Spencer blended accessibility and curricular accommodations with the social and interpersonal aspects of inclusion. As Spencer described,

Students all come from different backgrounds, look different, and have different abilities and needs, but as they support each other, give, share, help and love they can help fill each other’s needs and make sure everyone’s learning is full, and “colourful.” When I think of inclusion in a learning context, I think first of identity inclusion. I think a student needs to feel their identity is included first. (drawing description)

Spencer (Figure 23) connected shapes (students) with rainbows to show students supporting each other and making each other’s learning “full and colourful” (drawing description). Spencer noted
how “varied identities can love and support each other at school” (drawing description), with interconnections among the components. This stance shifts inclusion from a matter of matching needs with accommodations to considering how each part of the system connects and can support each other, which is bolstered using multicoloured lines and abstraction of students as shapes.

**Figure 23**

*Spencer’s Individual Drawing: Identity Inclusion*

*Note.* Different students represented by shapes, connected by rainbows to show students with different backgrounds, appearances, abilities, and needs coming together and supporting each other.
Lawson’s drawing (Figure 24) was abstract and simple, but the underlying message marked a critical distinction in defining inclusion. Lawson emphasized integration instead of assimilation, as the latter presumed adapting students to normative expectations.

**Figure 24**

*Lawson’s Individual Drawing: Inclusion is not Assimilation*

*Note.* Overlapping circles representing different groups, where each learns from each other in a reciprocal relationship.

[Many] people look at inclusion as assimilation, not as integration…. Often, especially with special needs or with anybody who needs support, it’s like, “you need to be like the others.” “You don’t need to be like the others, you need to have the same access as the other people, but you need to be who you are.”… It’s reciprocal, everybody learns from each other. (Lawson, video transcript)
For Lawson, inclusion meant embracing and supporting the uniqueness of each student, rather than striving for uniformity or conformance in how students learned or were supported. Given the emphasis on terminology, I would further reclassify Lawson’s perspective as aligning with the term inclusion rather than integration, as the latter can imply a normal versus non-normal dichotomy, where people are integrated into a dominant group. Alex similarly stressed needing everyone’s unique perspective as “without it, critical information can be missed” (Figure 18, drawing description).

Gabrielle (Figure 25) also took a holistic approach in describing inclusions as a one-person-band. Each student was a different instrument, and “each contribution is different but integral to the overall ‘sound’—the beautiful melody produced by an inclusive classroom” (Gabrielle, drawing description). The person “in the picture is the classroom environment” (Gabrielle, interview transcript) rather than the teacher, deemphasizing the teacher as the key enabler of inclusion. This metaphor reframes inclusion from a deficit perspective focused on responding to students’ needs to a benefit perspective that incorporates each person’s uniqueness. The drawing conveys a snapshot of inclusion in the midst. The music notes and squiggly lines symbolizing sound and the smile on the person indicate a positive sentiment “produced by an inclusive classroom” (Gabrielle, drawing description). The high number of instruments and level of detail in the drawing show the many components that make up an inclusive environment and how they can combine.
Figure 25

*Gabrielle’s Individual Drawing: An Overall Sound*

*Note.* Inclusion as a one-person-band, where each student is an instrument contributing to an overall sound. The person is the classroom environment.
The systemic storyline addressed the interconnections among people, resources, and experiences. Whether ripples in a pond or harmonious sound, students and teachers affected each other. Key to this storyline was not attempting to fix or simply match needs to accommodations, but to understand each person’s uniqueness and consider them as beneficial to an overall inclusive environment.

Summary

The figured worlds of inclusion and disability had a range of characters, acts, and significance attributed to particular acts and outcomes (Holland et al., 1998). Common to all individual drawings was a recognition of diversity in terms of ability, background, needs, and support strategies. What varied was in how the participants addressed this diversity. The storylines conveyed the roles of students and teachers, their interactions, and implicit and explicit narratives of inclusive worlds. For some participants this meant bringing students with different attributes together for collaborative learning, while others took a formulaic approach in matching needs with supports. There were also distinctions in how the participations represented ideas. Some drawings included many elements but discerning a sense of cohesion or connection among the elements was difficult. As well, many participants depicted narrative scenes of inclusion and disability in action. Overall, the individual representation activity achieved the design conjecture of having preservice teachers represent their ideas in ways beyond just text; to show relationships between people, objects, and actions; and to show ideas in abstract forms.

There were also connections between the storylines the participants conveyed and storylines they had lived themselves or witnessed, such as during the practicum prior to the course. The participants’ experiences informed what they drew and the meanings of behind their drawings. For some participants, the drawings were a way to figure a world that stitched together
elements they believed should be part of inclusion even if the participants themselves had limited first-hand experience with the elements. Conversely, some participants replicated their experiences of inclusion or instances of inclusion they witnessed. As well, some drawings abstracted literal classrooms or examples of inclusion to focus on overarching sentiments and stances toward inclusion and disability.

**Socially Negotiating Figured Worlds of Inclusion and Disability**

The individual drawing task showcased experiences and encounters with inclusion and disability preservice teachers brought to the activity. The group drawing task encouraged the preservice teachers to go beyond the show-and-tell of their ideas, and instead to consider other perspectives and collaboratively develop representations of inclusion and disability. The findings show how preservice teachers achieved the design conjecture to not only share their ideas but work with them and negotiate an understanding and representation of figured worlds together. Figured worlds are durable but not static and participants of a world are perpetually engaged in (re)figuring them (Holland et al., 1998). All 32 of the participants’ individual drawings conveyed inclusion as an important and positive aspect of teaching and learning. The group task helped tease out the nuances of this sentiment as the participants played with ideas to represent inclusion and disability.

Prior to starting the group task, the participants explored the online gallery of their peers’ drawings of an inclusive world as a jumping off point in creating a group drawing. This section offers a glimpse into the social negotiations of how the participants interpreted figured worlds of inclusion and disability. Complementing the individual task, analysis of the group interactions offers insights into how the group members brought forward and negotiated various understandings of inclusion and disability as they created the representations. Such discussions
of inclusion and disability could be analogous to how teachers discuss these concepts with colleagues in schools and real-world contexts, such as when developing inclusive initiatives and practices. Whereas in the previous sections I focused on how individuals understood inclusion and disability and organized the data into storylines, the following sections focus on how groups of participants constructed understandings of inclusion and disability together.

For both the individual and group drawings, the participants were asked to draw inclusion. In the group drawing, the participants were also encouraged to go beyond just accommodations and geographic inclusion sense toward a more holistic perspective (Appendix B). I highlight two groups and their decisions about what to draw and convey in their drawings. I selected the two groups as typical of negotiations the participants engaged in during the group task. I also selected them as interesting cases that used a breadth of symbols, colours, and metaphors in their drawings and the processes of the negotiation were apparent in the recordings.

I extracted brief moments from the video transcripts to show the participants negotiating concepts and ideas. Examining these discourses gives a glimpse into the processes of creating representations to complement my analysis of the representations themselves. Group A (Figure 26) took a more organized approach in deciding on an overall concept before starting on their drawing, while Group B (Figure 27) was more piecemeal in adding elements to their drawing as they came up in conversation. The excerpts show how the participants engaged in this process and the ebbs and flows of their negotiations, who at times scrutinized specific words and concepts to a high degree and at other times accepted ideas without debate. Both cases show signs of heterogenous meaning-making, in that varied ideas and concepts—including those that seemed only partially relevant—were brought together in discussions of disability and inclusion.
Multiple Paths to Multiple Treasures

Group A started by deciding on a central concept or idea for their drawing (Figure 26). The selected excerpts detail how the group negotiated a goal of education and how to offer inclusive pathways toward achieving this goal. The group deliberately chose terms and questioned each other about the implications of specific terms. By the end of the task, however, this scrutiny subsided as the group focused on completing the task within the allotted time. The lab instructors, acting on my behalf, allotted the first 20 minutes of the lab session for the participants to browse through the online gallery of approximately 300 individual drawings generated by the larger class and to discuss what struck them about their peers’ drawings. The lab instructors instructed the participants to draw an inclusive environment and encouraged to go beyond thinking about inclusion as shared time and space (Appendix B).

The following excerpts pick up after the first 20 minutes of the session when the participants began the collaborative drawing task. Group A started by setting bounds for the task and what they should or should not draw.

(1) Sue: Who’s artistic?
(2) Paul: So we have to draw a classroom?
(3) Sue: Yeah. No, she’s saying=
(4) Mike: Draw an {inclusive environment}
(5) Sue: {=Don’t do-} Don’t do a classroom

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4 Unless otherwise noted, excerpts in this section come from the Group A video transcript.

5 Transcript notation adapted from Gupta et al. (2016): Curly brackets “{}” indicate pairs of overlapping talk, square brackets “[[]]” indicate added clarifying information, an equal sign “=” indicates when a speaker was interrupted but continued after the interruption, two periods inside brackets “(..)” indicate a pause in speech, an ellipses “…” indicates portions of transcript omitted, and a dash “-” indicates broken or unfinished speech.
(6) Mike: How can you go beyond just accommodations of geographic inclusions, same physical time space? [reading instructions from a slide at the front of the room]

(7) Alex: [inaudible] the globes and stuff, just exclude all of that [laughs].

Responding to Paul’s question, Sue interpreted the lab instructor’s directions as meaning they should not draw a classroom, this despite no such formal restriction being given. This brief exchange, while seemingly minor, set a trajectory for the group’s discussion and drawing. Sue’s opening question (line 1) asserted the act of drawing required specific skills and suggests drawing quality/fidelity as a priority. Sue and Alex also framed the drawing as something that should appease the instructor (i.e., “she’s saying don’t do,” “just exclude all of that”). While these desires for quality and appeasement faded into the background for much of the discussion, the participants’ positions as students nudged the group in meaningful ways.

(8) Paul: What themes do you think we should include?… What struck me about doing the IPP was … it made me think of it in a very medical, very clinical way, whereas the sections towards the end [of the IPP] focusing on [the student’s] strengths and how to- I don’t know, it had a lot more empathy to it.

…[clarifying discussion of what part of the IPP Paul was referencing]…

(9) Paul: So, I want to include a heart somewhere.

(10) Alex: I’m down for that.

(11) Sue: Yeah.

Paul’s wish to include a heart into their drawing (line 9) staked out the beginnings of a counter-world, affirmed by Alex and Sue, to put their drawing in opposition as a counter-balance to the clinical nature of the IPP. Paul’s critique (line 8) about the IPP document being highly medical and clinical hints at a possible “counter-world, [where] motives are askew and actions are opposed to the course of events appropriate to the world’s topos” (Holland et al., 1998, p. 250). Identifying elements of a counter-world does social work (Holland et al., 1998) in valuing
participants of an inclusive world who espouse empathy. Further, Paul’s reflection of the IPP task supports my design decision to do the collaborative drawing task after the IPP as, for Paul at least, the IPP task became a reference point in considering inclusion. The meanings and understanding of Paul’s comment about the IPP are also contextual and situated as a common reference point among the group members, all of whom also completed the IPP task.

Gutiérrez Pérez (2008)’s work similarly found alignment between a heart and notions of empathy as socially constructed and recognized metaphors. Paul’s critique of the IPP also ascribes a clinical perspective as being limited in characterizing students. The discussion continued:

(12) Mike: Remember, [the student in the IPP is] just one member of 32 kids, right? So thinking of UDL, how we can also include that as well.

(13) Alex: Yes. How do we draw {inclusivity without-}

(14) Sue: {How do we draw it?} Yeah, that’s what I’m trying to get as well.

(15) Mike: How do you draw what?

(16) Alex: Inclusivity, without just having like the whole students in a circle holding hands type style- because it’s hard…. They essentially said don’t do everything we did last time, which is tough [laughs]…. Jason, you’re an artist. What’s your heart say?

(17) Jason: Do something abstract.

(18) Sue: Yeah, abstract.

The discussion highlights the moment-to-moment process of negotiating a representation of a figured world, where the group oscillated between certainty in setting bounds (i.e., not a classroom, includes UDL) and uncertainty in what to do within the bounds (line 13). Alex resurfaced appeasement undertones (line 16), calling on Jason as “an artist” to weigh in on the group’s approach. Alex’s comment was about the lab instructor’s instructions to go beyond conceptualizing inclusion as accommodations or shared spaces (Appendix B).
So far, the group primarily discussed the parameters for the task to satisfy the instructions and their conceptual goals. Each of these parameters had “representational consequences” and were “socially mediated, open to change, and negotiated within ongoing activity” (Danish & Enyedy, 2007, p. 21). While the underlying task remained unchanged, the group was fluid in how they prioritized, modified, and addressed these goals throughout the activity.

With the bounds set, Paul suggested a treasure map (line 19) and, in the video, can be seen jotting notes and sketching in a notebook while describing the idea. Sketching while describing was not part of the design conjecture, but it shows how Paul and the group integrated the act of drawing within the meaning making process. The group discussed Paul’s suggestion:

(19) Paul: I’m thinking a treasure map but with lots of different starting points and lots of different finishing points and=

(20) Alex: {Oh, that’s fun.}

(21) Paul: {=lots of different interconnecting} points.

(22) Alex: Yeah, that’s so fun.

(23) Sue: That’s creative.

(24) Paul: I don’t know. [softer tone]

(25) Alex: Look at you go.

(26) Sue: The treasure is knowledge or information. Knowledge I guess or information.

(27) Alex: What were {the different-}

(28) Mike: {What is the treasure?}

(29) Sue: Knowledge (..) or ways of learning. What {was the new one that is-}

(30) Mike: {For who?}

(31) Alex: UDL?

(32) Mike: Speaking of UDL {not every=}
(33) Sue: {Not UDL}

(34) Mike: =kid in the classroom treasures knowledge.

(35) Paul: That’s why [inaudible]-

(36) Mike: Sometimes for them {treasure is survival.}

(37) Sue: {Knowledge isn’t the right word.} What is the word in the new curriculum? Competencies or something, right?

Alex and Sue affirmed Paul’s suggestion of a treasure map without hesitation (line 20, line 22), though Paul hedged the idea by ending with “I don’t know” (line 24). Sue’s and Alex’s support of Paul’s idea also shows their support in moving away from the medical orientations of an IPP. Lines 19-37 showcase how the designed activity supported heterogeneous meaning making (Rosebery et al., 2010) by bringing into contact multiple considerations of inclusion, specifically, treasure maps, knowledge, UDL, student values, the curriculum, and competencies.

Sue declared treasure as “knowledge or information” (line 26). Mike either ignored or did not register Sue’s comment and asked how treasure was being defined (line 28). In the recording, Sue looked at Mike and repeated “knowledge,” (line 29) before pausing, implying Sue believed this was an acceptable answer and did not need to say more. When Mike did not affirm Sue’s idea, Sue continued by offering another option, “or ways of knowing” (line 29) and Sue asked the broader group about a third option, “What was the new one that is-,” seemingly to come up with an option Mike and/or others might endorse. Before Sue finished speaking, Mike asked “for who?” (line 30) posing a challenge to the assumption of knowledge as a prized goal, noting not all students prioritized knowledge as an end goal. As seen in the recording, Sue was quick to define treasure as knowledge, suggesting this was an instinctual association. However, Sue’s response was fleeting as Sue rejected it as not “the right word” and tried to recall “the word in the new curriculum” (i.e., competencies; line 37).
This exchange underscores how emergent preservice teachers’ conceptions of education and inclusion could be. “What is the treasure?” (line 28) in the context of education, was a broad and philosophical question with many possible answers, one that the group initially seemed unsure how to answer as evidenced by the multiplicity of responses (i.e., knowledge, UDL, competencies, survival). Sue’s switch to “the word in the new curriculum” communicates trust and approval of the curriculum as an authoritative source. It also associates newness with superiority; a new curriculum is better than an old curriculum. In the following excerpt, Mike and Alex affirm competencies as an appropriate word and help justify its connection to treasure.

(38) Mike: Competencies
(39) Sue: Yeah.
(40) Alex: Oh, competencies?
(41) Paul: Learning
(42) Sue: Yeah. Wouldn’t that be what you’re trying to get them in the end {anyways}?
(43) Alex: {Because} all the survival skills are in there. {Knowledge is in there.}
(44) Mike: {Survival skills are in there.}
(45) Sue: Everything. Your competencies, how you do something, what you do. Doesn’t matter what the information is- [inaudible]
(46) Mike: Adaptability is one of the competencies.
(47) Sue: Yeah, so competencies is what your treasure is.
(48) Alex: Okay, so we have a treasure, competencies, and now we need the points that will help us get to these competencies.

Paul offered “learning,” (line 41) but none of the group members took up the suggestion nor did Paul repeat themselves. Paul’s response barely fit in the silence between Alex’s and Sue’s exchange, suggesting Paul’s response was likely addressing Mike’s original question (line 28) about what the treasure was rather than the discussion of competencies. Sue advanced
competencies as an all-encompassing term that rolled “everything” (line 45) into it. Alex associated survival skills as being “in there” (line 43) along with knowledge, to which Mike agreed. Sue further justified how competencies incorporated information and skills. The discussion ended when Alex (line 48) affirmed competencies as treasures and moved the discussion to how a person would get to those competencies—the pathways of the treasure map. The pathways are also a nod to the agency storyline, where students have choices in how they learn.

The “new curriculum” Sue referred to had been under development for several years within the province but had not been finalized or formally implemented (and as of 2021 remains in contentious limbo as governing bodies debate its final form). The preliminary policy documents defined competencies as “combinations of knowledge, skills, and attitudes that students develop and apply for successful learning, living, and working” (Alberta Education, 2016). Mike also mentioned adaptability, but this was not one of the eight competencies listed in the policy documents. The combination of Sue’s uncertainty and Mike’s error speaks to the group members’ emergent knowledge of the broader discourses in educational policy about competencies. It also shows the group’s attempts to develop an understanding of inclusion that opposed or differed from the medical model and IPP orientations to inclusion and disability.

In one sense, the reference to competencies suggests an attempt to invoke knowledge from authoritative sources (Alberta Education, 2016) to stabilize the group’s understanding of inclusion (Gupta et al., 2016), perhaps to bind contemporary foci in education (i.e., competencies) with contemporary perspectives toward inclusion. In another sense, the group’s description of competencies is stabilized through interaction and results from a local coherence among the group (Gupta et al., 2016) independent of the formal curriculum documents. In other
words, the group invoked a known term and improvised a definition suitable for their needs.
Rosebery et al. (2010) similarly described how children used “everyday ideas and heterogeneous ways of knowing and talking as resources for understanding scientific ideas” (p. 351). The children used language and metaphors in novel ways that were productive but not necessarily in the same ways as formal or precise disciplinary language. In my research, the drawing task was intentionally open-ended without expectations of preservice teachers using specific or sanctioned terms or ways of knowing to convey their understanding of disability and inclusion. Group A’s recasting of terms from formal sources and integrating personal perspectives achieved my desired outcome of preservice teachers developing novel and diverse ways to understand disability and inclusion.

Jason observed but did not participate in the conversation until Sue invited Jason’s thoughts. The group took up Paul’s initial suggestion of a heart and discussed ways to incorporate it into their drawing. Jason noted how “the symbol of a circle [represented] being all encompassing or inclusive and also, like a heart” and wanted to incorporate such “shapes into the map itself.”

(49) Jason: [Sketching on a tablet] If you have a heart and you draw your treasure map to all these different points, and you make it so that it’s graphic enough, so that the shape is obvious and then you get rid of the shape of the heart [Several group members: {Ooohhh}] so that it’s like a-

(50) Mike: So … all the dots [are] creating an outline of a dotted heart.

(51) Jason: Yeah, so that it’s not a direct like=

(52) Sue: This is a heart. [said with emphasis]

(53) Jason: =a simple heart. It’s more of a-

(54) Sue: It’s inclusion … the idea is getting all inside a heart. I know what you’re saying.
(55) Paul: I like the idea of maybe having a town on the map as well, as in different shaped houses. I don’t know why.

(56) Mike: You want little houses, why?

(57) Paul: Just to show maybe some of the different backgrounds and where they’re coming from.

(58) Sue: Where they come from.

(59) Paul: Yeah, student background, but maybe it’s a crap idea…. I just want to draw a little garden (...) too.

(60) Sue: How long do we have, 15 to 20 minutes?

…

(61) Alex: Anything else anybody wants to add before-

(62) Sue: Well, why don’t we get the main thing started and if there’s anything we’re thinking, “Oh, this is missing,” we can find a way to=

(63) Alex: Implement it later?

(64) Sue: Incorporate it later.

After approximately nine minutes of discussion, Jason began drawing on behalf of the group (Figure 26). The group clarified Jason’s idea (i.e., a dotted outline of a heart) from an artistic perspective, but the discussion only went as far as loosely explaining inclusion as “the idea is getting all inside a heart” (line 54). Although not stated, a heart symbol can have associations with feelings of love or caring (Gutiérrez Pérez, 2008)—alluding to the emotion storyline. This absence of elaboration or discussion contrasts the earlier excerpts of justifying a connection between competencies and treasure. Here, there appears to be an unspoken understanding that a heart symbolizes inclusion. Similarly, Paul’s suggestion (line 57) to represent student backgrounds with “different shaped houses” is never fully explained but can be inferred as including people with diverse backgrounds. However, Paul hedged this idea and expressed diffidence, “maybe it’s a crap idea” (line 59). Pragmatics resurface as Sue and Alex
pull the group out of discussing the drawing content to strategize how to complete the task within the time remaining (lines 60-64).

The focus on varied pathways among the points of interest on the map is bolstered using colour for the pathways. The meandering of pathways also suggests an acknowledgment of how people’s experiences can vary and deemphasizes efficiency in arriving at the destinations as a marker of inclusion. The destinations are detailed but not coloured,backgrounding them slightly to the pathways. The nondescript treasure chests fortify this focus on the pathways as a key component in their world of inclusion.
Figure 26

Group A’s Drawing: Paths to Treasures

Note. Inclusion as a treasure map resembling a heart shape. Multiple treasures to represent competencies and pathways to reach the treasures. Panel A: Text on treasure chest, “Competencies.”
In the below excerpt, after drawing some of the key features (a treasure chest labelled as competencies, a school, a garden, houses), Jason asked if there were other destinations (treasures). Paul seemed unconcerned about identifying specific competencies/treasures. Jason pressed for more information, but Paul, who was simultaneously typing the description of the drawing, favoured depicting many treasures without specifying details (line 66, line 70).

(65) Jason: Are there other treasures, like competencies, that we want to take them to?

(66) Paul: [Pauses typing] Yeah. I just think they could be many different treasures.

(67) Sue: So put little ones {dotted around.}

(68) Paul: {Because everyone’s heading} in their own personal little route.

(69) Jason: Right, what are some other ones then?

(70) Paul: (..) I would just throw a shit-load of more treasure chests. [resumes typing]

(71) Alex: Then we can figure out what to put on them after. [laughs]

(72) Sue: If we have time.

Jason faced three expressions of disinterest in attempting to engage the group in discussion: first, Paul’s remark and resumption of typing; second, Alex’s compromise to defer identifying specific competencies; and third, Sue’s claim of such details as optional. This exchange appears to mark the point when Jason concedes to the group’s shift in focus to completing the task—dividing labour among the group—rather than in-depth discussion or debate. This last excerpt shows a change in the social negotiation from a process undertaken by the entire group to part of the group—Jason wanted to continue, but others appeared less interested. This shift is symbolic of how figured worlds are socially negotiated, where different participants of a world contribute at different times and are not always involved in the negotiation. As well, it reflects the pragmatic realities of how teachers must juggle time and effort toward inclusion with competing demands.
Throughout the recording, there are patterns in how the group members participated in the discussion. Sue appeared comfortable giving quick responses, in a tone that suggested confidence and seemed willing to debate or justify the responses with others. Mike often questioned ideas presented by others, a self-identified role; “I do question everything” (video transcript). Alex fell somewhere in-between, being slightly less assertive and asking fewer questions, while also being conscious of pragmatics in advancing the group to complete the task in the time allotted. Paul offered several significant ideas (e.g., the heart, treasure map) but was timid, often qualifying suggestions with statements of “I don’t know” and not debating or defending ideas if the group did not take them up. Jason was also reserved beyond drawing on behalf of the group. I note these patterns to highlight the fragility of the negotiation process. The negotiation of figured worlds depends on the social milieu of where it occurs, who participates, and how they participate in the negotiation. The group was successful in generating a drawing to represent figured worlds of inclusion and disability, but there were also multiple decision points in the discussions that could have altered the group’s trajectory.

Piecing Together Accommodations

Group B was deliberate in many of their ideas but did not outline a cohesive or unifying structure for how all the ideas went together. The excerpts6 below show how the group went through a pattern of debating and depicting a specific term or accommodation (e.g., ramp), before debating and depicting another term or accommodation, with the group only giving sparse consideration for how the elements related to each other and collectively formed an inclusive environment.

6 Unless otherwise noted, excerpts in this section come from the Group B video transcript.
Figure 27

Group B’s Drawing: Providing Choices

Note. A classroom with a collection of resources and concepts to support inclusion. Panel A: Text on poster, “YOU ARE WELCO-ME HERE.” Panel B: Text, left to right, “VISUAL,” “MULTIMODAL.” Panel C: Text on signpost repeated, “OUTCOME.” Panel D: Text, left to right, “RAMP,” “This is one of those exercise balls,” “Tactile,” “A Book; AUDITORY,” “QUIET CORNER.”

Group B’s drawing included a smattering of resources students could use (Figure 27).

The group started with choice (line 73) as a leading tenant of inclusion, which echoed the agency storyline in offering students various resources to support learning.

(73) Janel: I think one thing is choice. She [the lab instructor] wants us to make it more universal than just the physical time and place. Not just that you’re in a classroom and it’s set up this way, but what’s in place that makes it inclusive.

(74) Ann: How can you draw choice? [laughter]
(75) Brit: Great idea. [laughter]

(76) Ann: What is representative of choice?

(77) Dexter: I think it depends on what you’re including. Choice for someone in a wheelchair is different for someone, an able-bodied person with a disability. I think an inclusive classroom has to take into account all the various types of people you’re including. It’s not just one overall- Each variable has to be taken into account.

(78) Brit: That’s true.

(79) Ann: How should I draw that?

(80) Dexter: Well (..) a ramp, there has got to be a ramp in there somewhere. [laughter]

(81) Janel: Like this [shows the group Alex’s drawing (see Figure 18) from the collection of class drawings]. This person drew something good. It just lists all inclusive stuff.

(82) Ann: [Glances at Alex’s drawing] Okay, {this class is on a platform.} [starts drawing]

(83) Janel: {We have to talk about diversity in some way.}

…

(84) Dexter: My uncle is the president of the wheelchair basketball association. That is just like what popped into my head when they talked about inclusion. We would like go to games and watch them as a kid.

Janel (line 73) began by establishing the bounds and expectations of the activity, specifically to go beyond the physical sense of inclusion and disability. Janel interpreted this instruction as needing to consider “what’s in a place that makes it inclusive” and offered choice as one aspect of an inclusive environment. Dexter (line 77) commented on how the relevance of choices could vary by individual and situation. Further, Janel and Dexter’s exchange exemplifies how the drawing activity acted as a mediating process to support “heteroglossia—varied ways of conceptualizing, representing, evaluating, and engaging the world through language” (Rosebery et al., 2010, p. 351). In this case, Dexter’s uncle’s involvement with wheelchair basketball (line 84) meant choice was about physical accessibility. The ramp in the drawing signals a particular
lens to consider inclusion and disability in relation to wheelchair basketball. The wheelchair was a “personally powerful” (Holland et al., 1998, p. 61) artifact for Dexter. The above excerpt shows differences in how each group member was thinking about the task. Janel seemed to think at a conceptual level, suggesting sweeping terms such as choice and diversity, while Dexter attempted to connect high-level concepts to a specific context and flesh out the caveats. Ann seemed most concerned with the logistics of drawing choice, asking the group twice for suggestions (line 76, line 79). As intended in the design conjecture for participants to leverage the broader collection of drawings in their discussions, Janel (line 82) offered a peer’s drawing (Figure 18) as a response, but Ann did not seem to discern a representation of choice in that drawing to adopt and instead drew a ramp (Figure 27, Panel D).

The signpost (Figure 27, Panel C), like the ramp, had no specific connection to the other elements beyond a cursory representation of choice, but the group engaged in a more nuanced discussion about the signpost:

(85) Janel: Like the one they showed in class. It was everyone is taking a different path to try and get the same-

(86) Ann: What if I draw a little signpost with multiple directions, and it’s like each one said the same thing. {Several Group members: Yeah.} Okay, I’m drawing a signpost over here on top of the platform. [draws signpost outline]

…

(87) Ann: Where are they going?

…

(88) Janel: Finish line, and success or something.

(89) Brit: But success is different for everybody, right?

(90) Ann: Can we say, your best? All the different ways to do your best. (..) No? Maybe that’s not where we’re wanting to go? (..) I’m just going to colour those if you guys wanna-
(91) Janel: End, completion? (..) Where are the arrows going? [rhetorical]
(92) Ann: Inclusion?
(93) Janel: I want them to be like they are all pointing to the same objective=
(94) Ann: Yeah.
(95) Janel: =the same thing. What is that thing? (..)
(96) Brit: Curricular outcome or something?
(97) Janel: It needs to be shorter than that. It has to fit in the sign, that’s what I’m thinking. (..) Yeah, the word “outcome,” outcome-
(98) Ann: Yeah?
(99) Janel: Because the outcome is the same, but everybody is taking a different path to get to it.
(100) Brit: Sure, yeah
(101) Ann: Although is the outcome always the same?
(102) Brit: Well the outcome’s always the same, but it doesn’t necessarily mean that they get there the same way or they get to the same level of outcome, but the outcome is always the same. It’s the same for the whole grade, right? (..) I feel like there’s another word on the tip of my tongue.

In their discussion, Ann asked the group for ideas and offered “do your best” (line 90) as one idea for the signpost. When no one responded, Ann finished drawing and colouring the signpost. Janel suggested several ideas (i.e., “finish line,” “success,” “end, completion”) but the tone of their voice in the recording and rhetorical question did not imply firm commitment to those ideas (line 91). Ann suggested “inclusion” (line 92) but was again met with silence. In lines 93 and 95, Janel contemplated what the word should describe, to which Brit responded, “curricular outcome” (line 96). At this point, Ann had already drawn the outline of the signpost which funnelled the group’s interactions to negotiate a term that physically fit inside the drawn signpost (Jordan & Henderson, 1995). Janel shortened it to fit inside the sign and suggested “outcome” (line 97) to represent people taking different paths. Brit agreed, but Ann hesitated and
asked if the outcome was always the same. This excerpt shows a negotiation among the group, where the suggestion and rejection of multiple terms implies a thoughtful consideration of an appropriate term. That said, there were frequent pauses between responses suggesting uncertainty among the group members about how to relate a signpost to inclusion.

As with Group A, Group B sometimes invoked ideas from authoritative sources. A drawing of multiple pathways shown in the previous lecture (line 85) inspired the signpost, while the notion of outcomes came from government curriculum documents. Incorporating concepts from such sources figures inclusion and disability as being defined by systemic structures and teaching practices as complying with expectations set by governing bodies. Even so, there is a glimpse of Ann and Brit redefining terms in their own words. Ann questioned the idea outcomes always being the same (line 101) suggesting there were limitations to the term and it would not be inclusive to all learners. Brit offered an interpretation which factored in multiple levels of an outcome (line 102), thus expanding the definition to suit the context (and thus contribute to a local coherence). However, Brit also seemed tentative on outcome as a suitable word and tried to recall another term. Curricular outcomes are the formal roadmaps of what students are expected to learn, and they are perhaps one of the most dominant structures that influence how the education system operates. Given the loaded nature of curricular outcomes, how preservice teachers interpret this term can have dramatic effects on their practice and student learning.

After deciding on the signpost, the group identified resources students could use such as varied seating, a quiet corner, audiobooks, tactile objects, and “multimodal stuff.” In the video, Brit, Dexter, and Janel suggested such practices and resources with little debate or discussion, which Ann then added to the drawing. Janel asked about socio-emotional, community, and belonging in the drawing (line 103):
(103) Janel: What do we have for socio-emotional, community, belonging?

(104) Brit: We don’t yet.

(105) Janel: I think we should have something.

(106) Ann: Any ideas?

(107) Brit: We could have a poster on the wall.

(108) Ann: I’m drawing a poster that says, “You are loved.”

(109) Brit: “You are loved.” “You are welcome here.”

(110) Dexter: We could somehow try to represent including different cultural celebrations, or recognition, or acknowledgment in a classroom. Stuff like that.

Although the group briefly discussed some ideas, they did not engage in the same level of nuance as they did for the signpost. Janel’s query about three arguably complex terms amounted to a simple poster without elaboration as to how the poster represented these ideas (Figure 27, Panel A). Nor did the group discuss or take up Dexter’s suggestion of representing different cultures (line 110). Despite this lack of discussion, Janel felt the three terms (socio-emotional, community, belonging) were key aspects of this world and included them when writing the drawing description on behalf of the group:

We drew a classroom with elements that represents several factors of inclusivity in the classroom … in[clu][ding:] 

Structural inclusivity: People with disabilities of all kind[s] should have structures in place that allow them to function in school without being held back by a lack of structural accommodation…. Everyone should feel that the environment supports their learning.

Socio-emotional/community/belonging: … Students should feel that school is a safe space, where they are celebrated for who they are and supported in their community.

Academic/learning inclusivity: Students can take different pathways, and be given adequate choice in their assessments and activities … so that they can all reach the same outcomes, but do so in a way that works for them. (Group B, drawing description)

Janel wrote the description while Ann finished the drawing, but the group did not discuss why or how these categories were selected. Looking across the group’s interactions, there
seemed to have been two parallel and complementary, yet separate, efforts in constructing an understanding of inclusion and disability. Janel seemed to have a stable conception of inclusion in mind and the group took up several of Janel’s suggestions (i.e., choice, outcome). The rest of the group seemed less certain about how to represent and describe inclusion and was less cohesive relative to Janel’s written description.

Many of the group’s conversations led to disparate ideas related to inclusion and disability being rendered but without clear cohesion among the ideas beyond the general notion of choice. The group members themselves even acknowledged aspects of the drawing were unusual for a classroom, such as having a platform with a ramp: “this would be obviously easier, if you didn’t have a platform in the middle of your classroom.” The ramp exemplifies a local coherence (Gupta et al., 2016) in that the rationale for including it in the drawing is tied to the interactions of the group members. Outside this interaction, the ramp and platform seem unusual in a classroom environment. Many of the drawing elements are recognizable in themselves, but their presence and placement within the drawing is less apparent outside the interactions. The drawing uses recognizable elements to signal conceptual ideas.

Overall, the group identified an array of accommodations and resources, which they seemingly arranged haphazardly and occasionally, the group engaged in nuanced discussions about individual elements (e.g., the signpost). This exemplifies the group’s more passive approach to negotiating an understanding of inclusion and disability, where most ideas were accepted by the group with little or no debate. As well, only one person was drawn, indicating the characters of this inclusive world were largely undefined.
Summary

The two examples of the group drawing show varied social negotiation approaches by the participants. The data suggests the collaborative drawing task successfully supported preservice teachers in considering the ideas of others to develop diverse understandings of inclusion and disability. Group A debated most ideas carefully and considered how they fit together as a whole. They focused less on fine details (e.g., specific competencies) or how a teacher might connect competencies, backgrounds, and various routes to foster inclusion in a classroom. In contrast, Group B focused on individual resources to support inclusion but also was unclear on how the resources worked in concert to foster inclusion. Group B was more passive in their negotiation of ideas, with most ideas being accepted as-is. In moments of uncertainty in defining or deciding on a term, both groups adopted the words and ideas of others, such as from government documents or lectures, to help represent figured worlds of inclusion and disability.

Figured Worlds of Inclusion and Disability in the Field

As preservice teachers, the participants were guests to the classrooms of their field experiences (practicum placements). They entered existing, localized figured worlds of schooling with established norms and cultures that may have differed from the participants’ expectations. Practicum was a chance for the participants to test the waters of teaching in a real-world classroom. In the following sections, I revisit the storylines derived from the individual drawings to examine the participants’ social negotiations of inclusion in their field experience.

In their practicums, some storylines played out differently than the participants expected. As they described in the interviews, enacting inclusion sometimes meant taking their initial ideas and adjusting priorities or in other cases adding prerequisites. For example, before a preservice teacher could implement a collaborative activity, they needed to understand the relationships and
social dynamics among the students in a class. Similarly, students first needed competency in exercising agency before the agency storyline could take place. The initial storylines conveyed the participants’ desired end-goals and practicum fleshed out the complexities surrounding their enactment.

**Storyline 2.1: Collaboration in the Field: We Have to Know Each Other to Collaborate**

After the participants’ practicums, the collaboration storyline shifted from generic group work to understanding and supporting interpersonal connections to enable collaboration. In one case, group work seemed to have discouraged rather than fostered inclusion. Melanie described attempting a math activity where students, through debate, had to convince other students of their answer to a math question:

The class … didn’t have the best community within them and so the kids who are smarter, particularly one, puts down a lot of people who don’t know things, so people felt scared, so they just wanted to follow that kid.

I then changed it, and instead, just used A, B, C, D cards that they would show in the front [of the class] and then ask if anyone wanted to explain their reasoning. It was nice to be able to add little elements, but I definitely learned that it has to work with the group and that different things will work with different groups. (interview transcript)

Although Melanie adjusted the task to complete the lesson, the underlying social dynamics of the class were incompatible with their initial attempt. Melanie characterized that the class “didn’t have the best community,” suggesting a mismatch between Melanie’s ideals of how students would interact and the existing relationships between students. Melanie’s version of an inclusive world differed from the given class, and Melanie was not part of the previous social negotiations that established the norms and values of that class. Melanie’s drawing (Figure 6) was unique among the participants for including dialogue between students. In the speech bubbles, the text described students offering to work together, with some students agreeing and others preferring to work alone. However, in practicum, the social dynamics among students
were not as conducive to fostering such polite exchanges and supporting inclusion in the episode Melanie described.

Figured worlds are sociohistorical (Holland et al., 1998) and their outward presentation can often omit the underlying processes and negotiations prefacing a given moment. As Melanie explained, “I drew on a lot of examples that I actually saw in classes” (drawing description), but as became evident, the histories underpinning Melanie’s drawing versus their practicum placement were disparate enough to complicate the application of practices from one context to another. Melanie’s drawing and practicum experience aligned in using a deficit perspective to characterize challenges in terms of student attributes. For instance, when describing challenges with the math activity in practicum, Melanie used phrases such as “the class … didn’t have the best community,” “kids who are smarter,” and “people who don’t know things,” which characterize the students as the source of hurdles. While not intended as a slight against Melanie, these frame a figured world where inclusion depends more on compatible student behaviours than a teacher’s practices.

Sam also expressed hurdles around group work after realizing an interactive activity was inaccessible for some students:

There were students with selective mutism. How are you going to make a class that is interactive and collaborative if you have two students who just don’t talk? … With those students who did not talk, I gave them the option to write things down. (interview transcript)

Melanie’s and Sam’s experiences shed light on the unforeseen details of the collaboration storyline and their approaches to inclusion. In both cases, Melanie and Sam reverted to more traditional practices of individual work, which shows how their notion of collaboration depends on compatible interpersonal relationships and ways of communicating. Having students work individually reduced the number of moving parts the participants had to contend with in leading
the activities at the expense of more social learning opportunities. For Sam, collaboration was
synonymous with verbal modes of interaction. At the time, Sam’s version of inclusion had not
yet considered alternative interpretations of collaboration that were accessible to non-verbal
modes of communication.

The participants’ encounters demonstrate moments of improvisation (Holland et al.,
1998) to satisfy an overarching priority of having students complete a lesson. Such ad hoc
adjustments also reproduce an expectation of schooling that when something goes awry in a
room full of students, the teacher carries on. Using individual approaches as backups also implies
the participants believed they were inferior to collaborative approaches. Moreover, these cases
show how enacting inclusion can be difficult work and how a world figured in one context may
require improvisation in another context to satisfy desired outcomes or to renegotiate such
outcomes (Holland et al., 1998).

In contrast, Sara’s practicum experience in Grade 11 and Grade 12 chemistry classes and
initial drawing (Figure 3) of some students working individually while others worked
collaboratively aligned more closely. Regarding practicum, Sara remarked, “Some students had
IPPs but they had gotten to the point where they were dealing with their own accommodations.
They were self-advocating” (interview transcript). Sara’s partner teacher often started classes
with a pair-share exercise where students discussed the day’s topic with peers, setting a
precedent for dialogue among students as part of learning. Sara reported students could also
choose to work individually, in a group, and use available resources such as a whiteboard during
learning activities. The established norms of the class matched with Sara’s expectations of
collaboration and student agency as a mechanism to foster inclusion.
The collaboration storyline became more complex as the participants progressed from their initial drawings to their practicum experiences. In practicum, the participants were still working towards robust implementations of collaboration once they realized the complexities of social dynamics. In moments of challenge, some participants retreated to traditional practices, such as individual work, to finish an activity and satisfy a world of schooling that expected the teacher to persevere. As newcomers to the profession, the participants had not yet conceived or learned of collaboration storylines that accounted for some of the situations they encountered (e.g., students with mutism).

**Storyline 2.2: Community in the Field: Everyone Plays a Role in Fostering Belonging**

The community storyline evolved from a broad sensibility to addressing specific needs, relationship building, and interpersonal connections. Gloria initially described community as an essential “root” of inclusion (drawing description) but did not necessarily feel included in practicum:

This school I was in was predominantly white. I didn’t see too [many] kids who were from a minority and even for me, even though I was born and raised here, [and] I went to school here, I’m obviously not white…. Nobody said anything to me that was offensive or whatever, but I just felt unwelcome…. I think [in the course] we focused so much on the students being included, we ignored the teacher’s perspective of it. That took me by surprise because I wasn’t expected to feel excluded. (interview transcript)

Gloria’s experience surfaces a key assumption of inclusion and the world of schooling more broadly, in that teachers themselves rely on being included by their classroom and school communities to foster inclusion for their students.

All participants noted in their interviews that interpersonal relationships were important contributors to inclusive communities. These communities ranged in scope from a class to a school, and beyond. Communities were often associated with environments where students could
feel a sense of belonging. For instance, Seth recalled a student that struggled with having a positive attitude and respectful interactions with others on a badminton team:

One dilemma we had [when] we were making cuts for the team, [was] this one student [whose] attitude isn’t so great, [the] respect isn’t there, [and] there’s no effort… The principal really want[ed] this kid to be on the team because that’s all he ha[d] going for him. That really reminded me of this stuff, inclusion, and really that social context…. Knowing a student and having that relationship, that’s probably the biggest thing. Really, I think that drove a lot of my decisions in the classroom. (interview transcript)

The principal valued the community formed within the badminton team to foster inclusion. Here, addressing the student’s social needs and sense of belonging took priority over other attributes, such as badminton skills. This encounter reified Seth’s assigning of significance to relationships as a valued component of an inclusive world. Seth placed the responsibility of “knowing a student” on the teacher and identified relationships as a key driver of decision making. Kelly similarly described community as intertwined with inclusion:

My first drawing was a lot more classroom focused and [now] I think inclusion is a lot more community focused…. At the end of the day, it’s your classroom that you’re trying to keep your kid in and feel okay in that classroom…. Inclusion is just so much more than just that one student and trying to work with them in that classroom. It is literally their entire world and trying to fit them into their world and you into it as well. (interview transcript)

Kelly came to realize the significance of community to students. Kelly also ascribed ownership of the environment to the teacher (i.e., “your classroom”) and a responsibility to forge inclusive spaces for the teacher and students to coexist. Whether between students or students and the teacher, building relationships was a crucial part of inclusion. Relationships enabled opportunities for inclusion to occur and for students to advocate for themselves and exercise self-awareness of how they learn: “If you develop a good relationship with your kids, then they learn to trust you and they know that you care” (Megan, interview transcript). Melanie similarly realized a notion of care and support as characteristics of community when a principal advised…
that for some students, a “week at home [for spring break] is the worst possible thing…. We need to make sure these kids are safe” (interview transcript).

Such examples underscore community as a foundational component of inclusion that recognizes students’ lives inside and outside of school. As well, these expand the community storyline from general feelings of belonging to establishing and maintaining schools as caring and supportive environments that go beyond just academics.

**Storyline 2.3: Accommodation in the Field: Helpful but Also Complicated**

The accommodation storyline evolved from being mere tools or resources to markers of social position. Some participants also bumped against the limits of accommodations and individual support strategies. For example, stigma associated with an IPP could complicate the accommodation storyline and hamper efforts to implement support strategies:

The teachers and even the administration [said] that the student needs an IPP and it was proposed to the parents, but the parents were resist[ant] to it because [of] the stigma that’s attached to an IPP, so that’s a big hurdle. What happens when it is very clear that a student needs support but are not given that support because parents resist it? (Sam, interview transcript)

Sam’s remark shows how different interpretations of a figured world can clash or be incompatible. It also shows how one interpretation can block or alter actions in another interpretation of the same world. In this case, the social position of the parents and student compelled the participant and school staff to honour a figured world where avoiding stigma was prioritized over using an IPP to access supports. As Holland et al. (1998) pointed out, negotiating a figured world does not imply mutual satisfaction for all parties involved. Power structures and social positions privilege particular acts and outcomes even if a world’s participants disagree with them.

Not only were parents sensitive to stigma, but so were students. A student refused resources offered by Laura’s partner teacher:
[The student] so strongly didn’t want to be different, that he wouldn’t even accept the notes printed out. I would check up on him and just encouraged him to keep trying, but I would see his notes and after 10 minutes, he would have only three or four words written down. I think she’s [the partner teacher] still trying to find ways to get him to accept the help…. He just didn’t want anything different at all. That was hard. (Laura, interview transcript)

At some point, the student formed an association with receiving support as a marker of difference and negativity, and the student prioritized an appearance of “fitting in” over using supports. This scenario shows the interplay of nested figured worlds. In this case, the world of inclusion meant offering a student supports, but a broader world of schooling had social structures that defined the relationship between a teacher and students as one where the teacher could not force a student to accept supports. Fitting in was a “form of symbolic capital, a measure of one’s social worth” (Holland et al., 1998, p. 140), and for the student, accommodations compromised that capital and their position in the world of schooling.

Stigma was a strand of the accommodation storyline that signalled broader deficit-oriented perceptions of disability. This adds a prerequisite to supporting students’ needs in that a teacher must first address stigma before implementing accommodations. Moreover, such cases show the fault lines of psychometric based models of disability support which presume a student will go fluidly from diagnostic assessments to receiving accommodations and being successful.

In another case, Blair felt that despite having an IPP, some students were not well accommodated and that teachers seemed unconcerned about students’ challenges:

I was honestly a little bit less than impressed with how they were accommodated…. There were quite a few students with IPPs. I never once saw any of them or was told how to accommodate these students. I was just told that they had IPPs. When I asked, “How are we accommodating them?” I wasn’t really given an answer. (interview transcript)

Blair’s experience highlights the need for a school environment that conveys care and concern to foster inclusion and accommodate students’ needs earnestly. This also shows the power teachers can hold in appreciating students’ needs and implementing inclusive supports. The impression
Blair got from colleagues was a stark contrast to the drawings that conveyed ideas of offering multiple supports to students and empowering students with the agency to make decisions about their learning.

In contrast, Carly described how one teacher addressed students’ needs by having students help each other:

Every student was able to stay in the classroom and work together. The teacher really relied on a lot of … peer-teaching. Instead of her always going aside to the one student who was maybe on IPP or needed more help, she would have maybe one of the high-flyer students … provide them help and support. (interview transcript)

The peer-teaching Carly observed markedly varied from the idea of “learners being fully supported by their teacher,” (drawing description) rather than a distributed approach. Carly rendered (Figure 28) the teacher larger than students and positioned them in the upper-centre portion of the drawing with their arms surrounding students, which framed the teacher as central to fostering inclusion. Diversity among the students was communicated using colour and each student having a different resource on their desk. Regarding their practicum, Carly reported extending accommodations and strategies for individuals to be available for the whole class, implementing a more universal design for learning approach: “A student … diagnosed with ADHD [attention-deficit/hyperactivity disorder] … need[ed] a lot of breaks throughout the class and transitions…. [So,] I would … do a body-break … for the entire class” (interview transcript).

Carly still positioned the teacher as central in fostering accommodations compared to the partner teacher, but Carly’s supports evolved from being focused on individual students to a class wide approach.
Note. A classroom with students with different needs and accommodations sitting in groups and supported by the teacher.

An assumption conveyed by the participants in the accommodation storyline, and the closely linked IPP support structure, was to target “core subject” areas such as mathematics, social studies, language arts, and sciences. As Lawson pointed out, IPPs seldom consider other subjects, such as shop, art, or elective classes:

A surprise for me … when I looked at these IPPs … none of them had shop included on them. It was just the core subjects represented…. “How are we going to help this student with power tools, with things that can injure them?” (interview transcript)

The absence of other subjects on IPPs—and the accommodation storyline—raises concerns about how to accommodate students in more experiential and hands-on learning environments compared to core subjects. Further, such omissions promote figured worlds of inclusion and disability that privilege specific contexts and signals historic disparities in how different subject areas are valued.
In their practicums, enactment became a key concern for many participants relative to their drawings. The day-to-day details of implementing accommodations muddied aspirations of offering students a selection of accommodation options and attending to each student’s needs. A compatible school culture and attitude towards inclusion could strongly shape which supports were available and how they were implemented. Some participants also recognized how the teacher did not have to be the sole source of support.

**Storyline 2.4: Agency in the Field: Making Effective Choices is a Skill**

In general, the participants believed in giving students a choice in how they learned or what resources they could access. However, Brittney pointed out how choices could also surface pragmatic challenges. In a social studies activity, Brittney offered students options to work independently or in groups and students could show their learning in several ways (e.g., multimedia, presentations). Brittney remarked,

> When you give them so many different options, they lose control a little bit too…. [T]hey all started in groups, and they all got in fights, and then they all went and did stuff by themselves and some presented to the class just by themselves…. To make it as inclusive as possible, giving them these different options, it derailed them a little bit too…. You’re caught between, “Can I implement inclusion as much as possible while still getting the lesson across?” (interview transcript)

As with the accommodation storyline, this account showcases how agency necessitates competency in exercising agency. Spencer observed such competencies in practicum at a high school, where students could identify which learning strategies and resources were helpful:

> [A student] might say, “Hey, I’m struggling to focus right now. I would like to do this instead. Can I work in the hall or can I use my headphones?”… That was nice to see them taking ownership of that…. My perception was that I would be doing this planning and I would be coming up with solutions to their needs…, whereas in reality, the students know what they need…. Empowering the students to be able to speak up and guide their own learning and accommodate the things that they ask for…. It’s not up to the teacher per se to take the lead in every situation. (interview transcript)
Spencer’s experience was an example of inclusion, where a student was self-aware of their needs, empowered to advocate for their needs, and had resources to meet their needs. This case gives credence to the agency storyline as a viable part of inclusion. These contrasting examples describe how agency itself is only as effective as a student’s own understanding of how they learn and their needs in conjunction with a receptive learning environment. Establishing a supportive classroom culture was key in empowering students to make effective choices about their learning.

**Storyline 2.5: Emotion in the Field: Inclusion is Something to Feel**

Following practicum, the participants refined their descriptions of emotional inclusion from broadly fostering happiness, love, and compassion to more directly addressing students’ circumstances. As Lorianne commented,

> There was a lot of mental health issues, emotional, lots of IPPs, lots of really horrifying stuff going on at home that the teachers were well aware of and were trying to accommodate. In that case, I found inclusion to be … really well done like from the principal on down. She was very, very emphatic that for a lot of these kids just being in the building is the biggest success they’re going to have today and to really meet them for where they are. (interview transcript)

Most drawings in the emotion storyline described general desired states of positive emotions, but this excerpt was more specific in identifying sources of negative emotions and their implications for how students experienced schooling. This also expands the emotion storyline from the classroom as an isolated context to consider students’ lives surrounding schooling. As Rachael aptly stated, “many kids bring baggage … [and] academics just take a backseat to just giving them a safe space at school” (interview transcript).

Lorianne voiced concern about how to support students that were frequently absent, forcing a more reactive than proactive approach:
How do you help that one student, one-on-one, and still help everyone else? … Some of them [students] wouldn’t show up to school for five days because of home problems and then they’re expected to write the Macbeth test. I don’t know the answer. I think … very much about [emotional] inclusion, but in terms of academics, I don’t know. (interview transcript)

Lorianne’s distinction between emotional and academic inclusion highlights how there can be tension in addressing multiple facets of inclusion. It also underscores looming expectations of students to adhere to a timetable and meet performance and learning objectives. Lorianne saw avenues for supporting students’ emotional states but struggled with how to also address pragmatic concerns with academics. In addition, a world of schooling built around rigid curricular and systemic structures that are not well poised to support emotional wellbeing only compounded this dilemma.

Emotion could also be a fleeting and complex aspect of a student. Alina tried to foster a relationship and connect with a student’s interests, but the student’s responses seemed to contradict what Alina observed.

I had such a hard time connecting with her [a student] for the whole time. It felt almost defiant…. I took in a short story book that I felt so confident … “She’s gonna love it.” At one point, I went, “Did you look at that book?” She went, “Yes.” I said, “Did you like it?” She said, “No.” Then over the next two weeks, I saw her with that book every single day…. [Another time,] she was so excited [about a drawing assignment], I was like, “Yes, I finally got her. She’s going to be excited, she’s going to do it, I’m so excited,” and she never handed it in. (Alina, interview transcript)

Unlike many drawings that showed students expressing happiness as a metric of inclusion, that storyline did not fit Alina’s encounters with the student. In such cases, a student’s outward presentation may not be a clear indicator of their emotional state or inclusion. Podry tackled a similar challenge and described a strategy to check in with students throughout the day:
With elementary [students], I had a mood chart or table, and students would … update it throughout the whole day. Most students would enter the class at the start of the day putting it as feeling happy or tired because they didn’t get enough sleep or whatnot. Then I can follow up with … how they’re feeling…. High school students are not as open to sharing their feelings and all that, so I found giving them anonymous ways to give me feedback…. [was] super helpful in adjusting my teaching and what I can do (interview transcript)

Podry employed different strategies to get feedback from younger and older students to account for their willingness to disclose their emotional states. In elementary, students’ emotions were more direct and rawer compared to high school students, where emotions seemed abstracted and anonymous. The former also placed the onus on the teacher to respond to students’ emotions compared to the latter, where students offered more direct feedback and suggestions.

Overall, the emotion storyline became more complex in terms of influences, identification, and responding while balancing competing priorities. Among the excerpts shared above, the participants expressed how important emotions were as part of inclusion and a shared responsibility for supporting emotional wellbeing.

**Storyline 2.6: Preservice Teachers in the Field: Entering Existing Worlds**

Coming into classrooms and schools with existing norms and practices, the participants had to negotiate and reconcile their ideas and perspectives with the practicum environments they entered. While not a storyline, the following captures some of the participants’ experiences and tensions around as they attempted to negotiate their understanding of inclusion and disability while also being students themselves.

In several cases, the participants felt at odds with the culture and practices of their practicum placement school. For instance, Robin realized a philosophical difference between themself and the practicum school, to the extent Robin would avoid working in such an environment in the future:
There were a lot of things I thought I would have done differently. I mean, let’s just say I don’t think I’m going to be teaching at that kind of school, that kind of philosophy with that traditional learning style…. It was the direct instruction, it was the way they taught spelling and communication and to everybody the same way…. Inclusion didn’t seem to happen. (interview transcript)

Robin’s experience shows how social negotiations not only shape the construction of figured worlds but also counter-worlds. Working in an environment that disagreed with Robin’s philosophical perspective solidified Robin’s understanding of a figured world to avoid.

Blair similarly expressed frustration with how school staff treated a student diagnosed with ADHD, who would be sent to the hallways if they disrupted class. Blair also described a teacher that would “point out the one kid that couldn’t read properly, and say, ‘I’ll talk to you later. You can do something different.’ I just couldn’t imagine how called out that he would have felt” (interview transcript). These examples show not just a difference in teaching practices, but an epistemological clash between the participant and the placement school. Like Robin, Blair’s frustrations marked a counter-world to understanding inclusion and disability.

Figured worlds are dynamic and constantly renegotiated by participants of a world, but human and non-human forces can also restrict a figured world from evolving. For instance, Samantha was placed in an older multistory school with no elevator. The school could not deny students with mobility needs, but Samantha was told the school would “recommend that they [a prospective student] don’t come here, but if they do, we would put in the ramp thing that goes up the stairs” (interview transcript). In this case, the physical environment perpetuated historic versions of a figured world of schooling, which constrained possibilities for new negotiations of a world.

This type of reactive approach signals a world that privileges certain physical abilities and discourages others rather than proactively creating an inclusive environment. Incidentally, this school also followed the Traditional Learning Centre model, which used practices such as
direct instruction as the primary form of instruction, uniforms, and character education. This top-down model was so ingrained in students that when Samantha offered alternative options for an assignment, the students resisted:

[I told students.] “You can write this reflection using written format or you can do a verbal blog like Vlog, or you can do a diagram, or you can do a flowchart … or come talk to me if you want to do something else.” Everyone chose written…. They’re just used to that or they didn’t know what to do if it wasn’t written. I think the traditional learning was limiting in that way. (interview transcript)

As beginning educators, some participants struggled to balance their time in teaching, lesson planning, and attending to student needs. Spencer commented on the logistical challenges of enough time to understand and support students’ needs while also developing lesson plans: “It was stressful just trying to pull our lesson together that when it came time to stop and think about the individual needs of my students and how to include them, those things almost maybe got rushed over” (interview transcript). Similarly, Sam found supporting many students challenging: “I still think [inclusion is] awesome, in theory, but in practice, I think it’s difficult…. [With], four or five classes a day, they’re all different students. How do you accommodate like 30 kids in one class?” (interview transcript).

The experiences by Spencer and Sam show the complexities of a preservice teacher trying to juggle many considerations for teaching as they negotiate priorities in teaching and learning, while also considering student needs. Sam’s remark about inclusion being great “in theory” indicates Sam had not yet found a way to figure a world of inclusion using their own words and experiences. Sam was not yet living within the world of inclusion but adjacent to it.

Summary

In their field experiences, many of the participants’ initial ideas were recognizable, but the storylines became more complex. Often, the participants encountered hurdles or recognized necessary prerequisites to implement inclusive practices. Many of these barriers were related to
school culture and systemic structures, as well as perceptions (e.g., stigma) about what accommodations were and who used them. In addition, the participants were preservice teachers who stepped into existing classrooms, schools, and environments and had to negotiate with established norms and practices, which sometimes constrained or shaped their approaches to inclusion and disability.

Summary of Findings

The participants figured the worlds of inclusion and disability with more depth as they progressed. Based on the individual drawings, the participants repeatedly conveyed an appreciation for diversity and depicted ways to support diverse learning needs. Overall, the participants addressed a gambit of strategies to support students and often rendered multiple accommodations and resources within the same drawing, but at times, how the individual drawing elements worked in concert toward inclusion was unclear. Within individual storylines, there were also nuanced distinctions in how the same or similar terms were used. For instance, collaboration sometimes meant bringing together people with diverse attributes while at other times it meant grouping people with similar attributes. Inclusion also spilled into intangible considerations such as emotions and relationships.

The group drawing task showed how the participants engaged in social negotiation in representing a figured world. Using interaction analysis, it became apparent how fragile the negotiation process could be. The participants invoked resources from multiple sources and the figured worlds of schooling and social position could nudge a group in unexpected ways. There were also points where group members debated a specific term while at other points, ideas were incorporated into their drawings as-is, showing how social negotiations are dynamic processes.
Prior to field experience, the way participants figured inclusion and disability was akin to a rough line-drawing. After field experience, the participants used their practicum experiences as resources to begin to colour in and detail, or sometimes alter, the outlines they previously established. For some participants, their outlines of inclusion and disability grew, and even if the participants were unsure how to colour everything in, the participants expanded how they recognized and enacted figured worlds of inclusion and disability.
Chapter 5: Discussion

The participants constructed their understanding of inclusion and disability by drawing upon a multitude of sources and experiences. The findings show the range of storylines the participants conveyed about how inclusion could address disability, from specific practices of collaboration and accommodation to abstracted orientations, such as attending to agency and emotions. The first section of this chapter looks across the storylines, to identify resemblances with historical trends and discourses in education. In the first section, I situate the storylines among the historical discourses of disability in education to identify resemblances to ideas expressed by the participants. I discuss these in chronological order of historical trends.

As part of the representations themselves, the participants depicted various artifacts and drew upon lived experiences to represent inclusion. In the second section, I attend to how the participants’ understandings of inclusion and disability was conveyed through rendered elements. Constructing an understanding of inclusion and disability was also a socially negotiated process. The third section discusses how interactions with peers shaped the ways the participants developed understanding and representations of inclusion and disability. In the fourth section, I discuss how the participants’ field experiences contributed to their understanding of figured worlds of inclusion and disability. I also discuss how the participants authored and situated themselves within such worlds.

Situating Storylines in Historical Discourses

*Individualized Attributes of Disability and Inclusion*

Of the storylines, accommodation, agency, and emotion prioritize a student-centred perspective in which students are characterized and labelled according to individual attributes and emotional states. These attributes inform teaching strategies, supports, and resources. Within
these storylines, the participants recognized students as having unique needs and attributes and often framed learning as individual processes.

Accommodation aligns with historical trends of the last three decades when educators integrated students with disabilities into mainstream classrooms (DePoy & Gilson, 2011; Winzer, 2014). A challenge of this approach was that many schools, classrooms, and resources were designed and constructed prior to this shift, making them inaccessible (Boys, 2014). In response, educators matched students to accommodations based on individual student characteristics. This individualized approach is consistent with long-entrenched portrayals of education as structured, top down, and focused on individual academic performance (Davis et al., 2015). The average age of my participants was 28, suggesting many of them grew up and experienced this form of education throughout the 1980s and 1990s (Weber & Mitchell, 1995). Access to accommodations, in this framing, is strongly tied to diagnostic and medically oriented support structures, which reinforces an individualized approach (Bateman, 2011; DePoy & Gilson, 2011; Goodley, 2017; Titchkosky, 2003).

Among the drawings within the accommodation storyline students are all shown as unique and using individualized supports. All but one (Figure 10) of the classroom-based drawings show desks arranged in groups (Figure 9, Figure 5, Figure 13), suggesting alignment with contemporary practices of collaborative learning. Such depictions suggest competing ideas of addressing learning at a collaborative and social level but addressing disability at an individual level. These competing priorities exemplify, and are a product of, how the current education system in Alberta approaches disability and inclusion, where sociocultural theories of learning are encouraged, and communication and collaboration are explicit curricular competencies (Alberta Education, 2016). At the same time, funding and support structures, such as
individualized program plans, are ill suited to support students in developing such competencies (Alberta Education, 2004). The drawings within the agency storyline empower students to make choices about their learning but similarly emphasize learning and inclusive supports as an individual endeavour. This appears in drawings (e.g., Figure 15) where students can select differentiated learning pathways but are portrayed as pursuing those paths individually. This aligns with practices such as differentiated learning and instruction, which makes it unclear what the social environment surrounding differentiated learning pathways would look like or how it could support or hinder inclusion (Tomlinson, 2001; Winzer, 2014).

Renderings of emotion convey both individual and collective attributes of students. At the individual level, smiles and hearts were common symbols of positive emotions (e.g., Figure 18), suggesting students within inclusive environments would be happy. This also affirms happiness or positivity as a desired emotional state, couching people with a disability against an expected or preferable social norm (DePoy & Gilson, 2011; Weber & Mitchell, 1995; Titchkosky, 2003). Bessette (2008) reported similar patterns of teachers smiling or expressing positive emotions among the majority of children’s drawings of general and special education teachers. Jesse was an exception in showing students with other forms of emotion (Figure 20), but Jesse associated these alternatives with struggle and leaving a classroom, which positioned smiling as a desired state.

Linking outward appearances of positive emotions with inclusion aligns with what DePoy and Gilson (2011) classified as observable, interior environment descriptions of inclusion. The risk of such descriptions, however, is in minimizing or obscuring aspects of disability that are not outwardly visible. Relying on observable indicators of disability and/or inclusion can lead to acts of ableism that reify specific emotions or ways of being as normative
Further, functional accessibility and the appearance of positive emotion do not necessarily mean inclusion has been achieved. For example, a student could use text-to-speech software and get along with a peer but still be excluded by other students or the school community.

**Social Approaches to Disability and Inclusion**

The community and collaboration storylines consider inclusion and disability in terms of relationships and interactions between people. The drawings associated with these storylines suggest opportunities for students with and without disabilities to interact and learn together as part of a learning community. The drawings in these storylines share a common refrain of students interacting and learning together, and they frame these interactions in at least two ways: by grouping students with diverse attributes to support reciprocal enrichment (e.g., Figure 5, Figure 3), and by grouping students with similar characteristics (e.g., Figure 4).

The first approach aligns with sociocultural conceptions of learning, where people learn “through relationships and collaborative activity, with other humans” (Vygotsky, 1993, p. 218). In this conception, diversity is an asset that can enrich the group and students are active contributors to a learning community. The interior (i.e., bodily function and performance expectations) and exterior (e.g., accommodations, physical surroundings) environment orientations (DePoy & Gilson, 2011) apply in how the participants gave legitimacy to disability and inclusion through their representations. The grouping of students with diverse attributes exterior environmental legitimacy to disability (DePoy & Gilson, 2011) by recognizing its existence and valuing interaction among people with diverse experiences and perspectives. Bringing into contact diverse lived experiences reifies the notion of “heterogeneity as fundamental to learning” (Rosebery et al., 2010, p. 323) and that the “learning of all students is
limited when heterogeneity is ignored or goes unrecognized in the classroom” (p. 326).
Disability changes not only experiences of the moment but can also change or entirely obscure certain experiences over the long term. For example, Titchkosky (2003) explained how their dyslexia did not imply they “simply lack[ed] some of the shared background expectancies of various social situations and environments and thus need to acquire them in a different way. It means also that these background expectancies are never background for me” (p. 18). For Titchkosky, dyslexia was a core part of their daily life and how they experienced the world which could be fundamentally different from another person. Such differences in experience and perspective contribute to the heterogeneity of a class. Grouping for diversity lends itself toward reframing disability as part of the social fabric and affords opportunities for students to learn of other’s experiences, even if they have not or cannot have shared experiences.

The second approach, grouping similar students, suggests a priority of efficiency or pragmatics in using similar strategies and resources for students with similar characteristics. This approach clusters students based on common characteristics and performance levels to optimize the efficiency of support strategies. This legitimizes disability by defining an expected level of performance (interior environment), which then is used to segregate students to differentiate instruction (exterior environment) in service of achieving a performance expectation (DePoy & Gilson, 2011). Only Figure 4 explicitly described grouping by similarity, suggesting most participants aligned with more contemporary orientations to education where disability is part of the social fabric of a class and learning is conceived as social and participatory processes enhanced by diversity (Rosebery et al., 2010).

Inclusion is a broad and multifaceted concept. Booth and Ainscow (2002) described inclusion in education as “an unending process of increasing learning and participation for all
Booth and Ainscow (2002) developed a framework, referred to as the *Index for Inclusion* as a resource to support the development of inclusion within schools. The framework comprises three dimensions for school improvement: creating inclusive cultures, producing inclusive policies, and evolving inclusive practices. In terms of my research data, all participants expressed values and ideas that align with creating inclusive cultures, such as building community, valuing all students, and fostering a sense of belonging. There was also strong alignment between my data and the dimension of inclusive practices, specifically in terms of collaborative learning and providing students with resources to support learning. The third dimension, inclusive policies, is less considered in the participants’ drawings and descriptions of inclusion. As Booth and Ainscow (2002) argued, the three dimensions are interconnected and must all be addressed to support inclusion in a school. The participants’ field experiences show how misalignment or unbalanced consideration of the three dimensions can lead to tensions and hinder the development of an inclusive school environment.

**Systemic Approaches to Disability and Inclusion**

The systemic inclusion storyline extends the social storylines. Systemic approaches align with emergent orientations toward education in which students, classrooms, schools, and communities make up complex and entangled systems (Davis et al., 2015). A distinct feature of the drawings in the systemic storyline is the portrayal of inclusion, students, and teachers as part of a system where diversity is acknowledged but not emphasized. For example, Figure 22 shows diversity as an ecosystem rather than bringing attention to the labelling of specific students.

The systemic approach acknowledges the interconnections and relationships among its constituent elements. This also extends the social approaches to highlight not only that such relationships exist but that they sustain and support each other as a holistic system. Figure 25
emphasizes such connections through the acoustic harmony generated by the combination of individual student contributions. The sound is a collective output which could not be created by any one individual. These metaphors of systemic approaches show promise but, as DePoy and Gilson (2011) cautioned, removing labels or markers of diversity should not blur or obfuscate the diverse attributes of people or the uniqueness of their lived experiences, both positive and negative. The systemic perspective also applies to the support structures and systems with which students directly and indirectly interact with. As Robin (Figure 21) indicated, inclusion requires the collective effort of education assistants, students, parents, administrators, and medical professionals.

Overall, most of the participants’ drawings and descriptions aligned with social approaches to inclusion and disability, often in combination with individualized support strategies, such as accommodations. This combination of perspectives aligns closely with contemporary discourses in education which encourage teaching and learning as social practices while facing ongoing tension with historic focuses on individual learning and performance (DePoy & Gilson, 2011).

**Representing Figured Worlds of Disability and Inclusion**

In the previous section, I mapped the participants’ drawings and descriptions to broader historical trends and discourses of education. In this section, I discuss what the participants represented as part of figured worlds of disability and inclusion at a more granular level. This discussion unpacks some of what influenced the participants’ drawings and meanings associated with rendered elements.
Reproducing What has Been Seen

Figured worlds are “historical phenomena” made up of “processes or traditions of apprehension which gather us up and give us form as our lives intersect them” (Holland et al., 1998, p. 41). Representing a figured world relies on these intersections, or lack thereof, in order to recognize the cohesion of beliefs, values, and associations of significance that make up a world. Some worlds people “may never enter because of [their] social position or rank; some we may deny to others; some we may simply miss by contingency; some we may learn fully” (p. 41). For example, Titchkosky (2003) explained how their dyslexia and their partner’s blindness meant certain experiences and ways of participation in daily life were not only different but sometimes entirely unavailable to them. Inclusion is a world preservice teachers are expected to take up and participate in, but their experiences and past participation with the figured worlds of inclusion and disability can vary widely.

Representing a figured world is imagining “what might happen, based on what we have experienced in the past and what we have seen so far in the present, in order to understand what is going on [and] predict what might happen” (Gee, 2011, p. 80). People can also recognize figured worlds without being direct participants or only participants at the periphery. In turn, the conceptual resources that preservice teachers draw upon in understanding and representing inclusion and disability vary in type and depth. This is the difference between learning or knowing about a world versus living and experiencing a world from within (Esmonde, 2014; Jurow, 2005). Part of this difference is associated with timescales of participation in a world (Esmonde, 2014) and how a person’s social position enables or prevents access to a world. For example, the students in Jurow’s (2005) study did not initially make considerations for social interactions among scientists when designing an Antarctic research station. The students had
limited knowledge or experience in taking on the roles of architects or scientists, which
c constrained the considerations they conceived in designing a research station. When professional
architects visited the class (Jurow, 2005), the students’ design drawings were useful as a tangible
artifact of students’ thinking and became entry points into discussions about how participants of
the figured world of architecture might approach such a design task. Part of deepening
understanding of a world involves ongoing engagement with and consideration of a world and its
participants, which is something preservice teachers can continue to do as they begin their
teaching careers.

Along the spectrum of knowing about versus living within a world are recognizable and
common elements but the details, meanings, and implications of the elements can vary (Holland
et al., 1998). Learning about a figured world can also be challenged by available conceptual
resources and a person’s self-awareness of their social position. For instance, some of the
affluent students in Esmonde’s (2014) study of teaching mathematics for social justice activities
“had a strong tendency to reinforce their own privilege” by treating their own experiences as
“normal’ and trying to explain away the differences of high-poverty neighborhoods” (p. 386).
While my data does not suggest the participants actively tried to explain away disability or argue
against inclusion, Esmonde’s work highlights how social position can shape engagement with
and understanding of a figured world.

Sara, for example, commented that “although I am [in the] secondary [education] stream,
I have [two] children (Grades 2 & 3) and drew a lot from my own experiences observing their
classrooms after having been out of K-12 classrooms for many years” (drawing description).
Sara’s drawing (Figure 3) reflected their children’s school(s) from the perspective of a parent. As
a parent, Sara’s social position (Holland et al., 1998) meant their participation in the world would
be different than a teacher or student. In that context, Sara did not have the same “entitlement[s] to social and material resources” (p. 271) as a teacher. Perhaps Sara only saw the classroom briefly when picking up or dropping off their children, during parent-teacher meetings, or while helping out during an activity. In effect, Sara was borrowing a version of a world that they had seen and perhaps participated in at a cursory level, but not a world Sara had lived in as a teacher or student. Sara is also an example of holding dynamic, dual identities within a world. Sara held a positional identity as a parent while simultaneously developing a positional identity and disposition as a future teacher. Once a teacher, Sara will still hold a primary identity of a parent in the space of their children’s classrooms while also having the formal recognition and professional accreditation of being a teacher.

Creating a representation is not a neutral act. The creator decides what to include, what to leave out, bringing salience to rendered elements (Kress & van Leeuwen, 2021). Creating a representation helps make tangible a person’s understanding of a figured world. The participants’ drawings stake a claim and perspective about their experiences. For instance, Sara expressed appreciation for

> how different it [my children’s classrooms] was from my own experience…. There was just a different feeling, there was an energy in the rooms that they were in, and it did have a lot to do with the space and the mood and what and the teachers were actively trying to cultivate that…. It was regimented rows of desks while I was in elementary school. (interview transcript)

Sara’s drawing gave legitimacy (DePoy & Gilson, 2011) and implicit approval of their children’s classrooms as inclusive while conveying opposition to past experiences of “regimented rows of desks.” Hatt (2012), in their study of figured worlds, argued smartness is “something done to others as social positioning” which “signified not only a cultural practice of social control but a process of ascribing social power” (p. 439). I believe inclusion is similarly a social practice
imbued with social positioning and power in how students’ disabilities and needs are recognized and responded to.

The representation of figured worlds involves the interpretation and consideration of past experiences combined with inferences and expectations about future and/or unfamiliar experiences (Gee, 2011). Moreover, “when students and teachers enter a new classroom they do not begin with a clean slate; they bring a history of experiences … that influence their expectations for the new classroom” (Hatt, 2012, p. 444). In the act of representation, the participants were influenced by their experiences but could also decide what aspects of those experiences to bring forward, which to leave to out, and which to alter.

Greater familiarity with a world can afford a person a larger and more detailed pool of resources to draw upon in creating representations. For unfamiliar worlds, the available resources are fewer and less defined leading to a greater reliance on improvisations using available conceptual resources (Holland et al., 1998), inference, and speculation as well as omissions. That said, I did not expect the participants to produce hyper-realistic or accurate renderings. In addition to using past experiences as inspiration, the drawings were an opportunity for the participants to express desires, values, and ideals.

To some extent, the representations were opportunities to conceive “play worlds” in which the participants could imagine alternative worlds and possibilities using “recognized genres of speech and activity” but within worlds that only answered to themselves (Holland et al., 1998, p. 236). In this study, the drawing task was intentionally open ended, but such play was not entirely freewheeling given the need for the participants to share and discuss their drawings with peers and instructors. The participants’ drawings combined imagined possibilities, tacit understandings of what was “culturally desirable and acceptable,” and “reflect[ons of] their
personal environment and the experiences they have had” (Weber & Mitchell, 1995, p. 19). The possibilities and ideas of play worlds are not confined to them and can, and do, shape orientations and actions within the real world (Holland et al., 1998; Holland & Skinner, 2008).

Across the drawings, the participants often incorporated specific past experiences as markers of inclusion and disability. As examples, Sara reproduced their children’s classrooms, Nicole recalled a peer from childhood who used a wheelchair, Jesse recreated a scenario observed during practicum, and personal experiences with math as a child inspired Fiorella’s drawing. Invoking past experiences of schooling or life to inform preservice teachers’ current reasoning is common and unsurprising (Jordan & Stanovich, 2003). However, the drawings were a mix of past experiences, current discourse, and ideas for the future (e.g., Figure 11), which give significance to the decisions the participants made in creating their drawings. The next section delves into some of the meanings of drawn elements.

**Representing Artifacts of Figured Worlds**

In creating drawings, the participants had to decide what to show and not show. The participants depicted artifacts of disability and inclusion, ranging from physical and concrete items such as technology, furniture, and resources to abstracted ideas and metaphors such as hearts, shapes, and symbols. Artifacts are the building blocks of a figured world, which give shape to a world and how a world can be interpreted.

Artifacts “open up” figured worlds. They are the means by which figured worlds are evoked, collectively developed, individually learned, and made socially and personally powerful…. [Artifacts] have “developmental histories” by virtue of the activities of which they were previously a part and which they mediate in the present. (Holland et al., 1998, p. 61)

Artifacts themselves have histories, and each person has their histories with artifacts (Holland et al., 1998). Accordingly, individual histories and social milieu mediate the relevance and meaning of an artifact. Further, it is through the interaction and invocation of artifacts in a
world that they “are ascribed with shared meanings” (Boonstra, 2021, p. 2). Representations are also necessarily partial; “it is never the ‘whole object’ but only ever its critical aspects which are represented” (Kress & van Leeuwen, 2021, p. 9).

Artifacts can also hold power in conveying assumptions and attributes about the participants of a figured world simply by association. In Hatt’s (2012) study of figured worlds of smartness, each student had a toy car with their name on it and when students disobeyed a class rule, they had to move their car along a green-yellow-red stoplight; each student started the day on green. In addition, through reinforcement by the teacher, over time, “students defined smartness as ‘not having to move your car’” (p. 448). In practice, this associated smartness with obeying class rules, which came with social status and privileges in the classroom. In this way, students associated the toy car with being smart according to a narrow set of behaviours and attributes: “such artifacts become connected to and underlie students’ academic identities” (p. 455). Similarly, wheelchairs, while recognizable, can pose challenges when used as a generic symbol for disabilities. They legitimize disability in limited ways and obscure the many ways disabilities can manifest in visible and/or invisible forms (Kattari et al., 2018).

In related work on figured worlds of smartness, Hatt (2007) found that students commonly tied smartness within schools to artifacts such as grades, diplomas, labels as honours students, test scores, and participation in advanced classes. The artifacts “are what [made] smartness appear ‘real’ and as something tangible,” and could “influence students’ perceptions of themselves and their own abilities” (p. 151). Artifacts associated with disability, such as assistive technology and accommodations can similarly tie disability to stigmas as a marker of difference and alienate students with disabilities from peers (Ostrowski, 2016). Moreover, “students who struggle to acquire the artifacts of smartness… are left to either perceive
themselves as not smart or to reinterpret smartness” (Hatt, 2007, p. 153). Students with disabilities can face similar challenges and never attain certain artifacts of smartness—and by extension, inclusion—such as the label of honours student because their disability is incompatible with standardized measures of success. Attending to such artifacts has power in shaping how students perceive and experience schooling.

In the participants’ drawings, artifacts conveyed issues or concerns relevant to inclusion and disability but did not necessarily mean the participants had first-hand experiences or connections to them. A wheelchair is one of the most widely recognized symbols of disability in media despite only being relevant to a specific set of disabilities and mobility concerns (DePoy & Gilson, 2011; Titchkosky, 2009). The wheelchair is a facade of a complex and diverse world of disability. The symbol of a wheelchair legitimizes people with mobility related disabilities but can also contain them (DePoy & Gilson, 2011). Society often relegates wheelchair users to using specific doorways, ramps, elevators, or desks adorned with the symbol (Titchkosky, 2019). For instance, while Figure 28 shows a wheelchair user at a group of desks with other students, Figure 9 shows a wheelchair user off to the side of a group with a differently sized desk that does not match the other desks. The latter, off to the side rendering of a wheelchair, indexes different social positions and relations (Kress & van Leeuwen, 2021) between the wheelchair user and their peers.

Of the 32 individual drawings 10 included a wheelchair, but only Nicole (Figure 13) described a personal connection to wheelchairs. For the rest, the participants either used a wheelchair as a stand-in for the broader category of mobility support or left its meaning unspecified. Nicole recalled how their elementary school installed an automatic door for a friend with cerebral palsy. Nicole noted how “friendships and connections between diverse people gain
exposure and insight into the lives of people not like you” (drawing). For Nicole, the wheelchair was also a mediating device “to pivot or shift into the frame of a different world” (Holland et al., 1998, p. 50). Nicole’s experiences with a friend in elementary were impactful and informed a durable lens into how Nicole figured disability and inclusion. As an artifact, a wheelchair was “personally powerful” (Holland et al., 1998, p. 61) to Nicole.

In representing figured worlds of inclusion and disability, the participants embedded an array of artifacts in their drawings. Representation can be seen as part of a dialogic process of being addressed and answering by recruiting the words, experiences, and preexisting resources a person has been exposed to (Holland et al., 1998). The production of drawings, which are themselves artifacts, and the meanings assigned to the artifacts within them, create “openings for students to participate in [the] world” (Robinson, 2007, p. 206). All the artifacts and metaphors invoked by the participants came from somewhere and their meanings were made through dialogic exchanges of addressing and answering. In this case, being addressed refers to the participants’ past encounters with artifacts and answering refers to the act of drawing, which gives legitimacy to the elements rendered. If participants only had passive past encounters, such as seeing a wheelchair symbol on a door, their meaning differs from a wheelchair user. Consequently, how and what artifacts the participants included in their drawings necessarily differed based on the meanings afforded by their positional identities and how the artifacts substantiated in “the figured worlds of their use” (Holland et al., 1998, p. 61).

Visible and Invisible Diversity

All but two drawings that showed people rendered those people as having diverse attributes. The drawings depicted these attributes through variations in colour, gender, hairstyle, size, shape, use of or proximity to accommodations, and behaviours. Each of these were attempts
to give legitimacy to diversity and disabilities in ways such as through identifying differences in bodily function and appearance (interior environment), the use of different tools and resources (exterior environment), and differences in social positions, interactions, and identities (categorical classifications; DePoy & Gilson, 2011).

The participants also invoked explicit methods of making the invisible visible. For instance, when drawing students, 13 participants used colour to identify invisible disabilities or differences. Tina used “multicoloured stick people to demonstrate … visible and invisible differences, which represent challenges and strengths that are apparent to others, and those which have not been recognized” (drawing description). Conversely, Jason stated, “I purposely didn’t give any identifiable physical features or colour or anything like that to all the students just to signify that they could be anyone or anything…. I mostly tr[ied] to represent … the different learning needs” (interview transcript). Jason invoked a deliberate resistance to labelling students with visible markers of difference and instead focused on learning needs and supports.

This focus on needs rather than labels signals the complicated consequences that come with formal markers of difference. On the one hand, Jason reflected on personal challenges with attention deficit hyperactivity disorder, but without a diagnosis Jason “had a lot of issues in school…. I like to think of how much better I could have done in school had I had the necessary accommodations” (interview transcript). So, while Jason’s needs may or may not have been apparent to teachers, the lack of a formal diagnosis, Jason argued, prevented access to supports. A diagnosis legitimizes a disability (DePoy & Gilson, 2011) and can be a ticket to receiving funds and resources (Bateman, 2011) but it can invoke others to perceive one differently and potential associations of stigma (Hale, 2015; Ostrowski, 2016). Jason’s experiences highlight two figured worlds of inclusion. The first, being the one Jason knew and experienced where
markers of disability had pragmatic consequences and the second, being an aspirational world where access to resources and supports was not dependent on formal markers of disability.

**Representing Narratives of Disability and Inclusion**

Figured worlds, at their core, are orientations to engagement and participation in daily life. Holland et al. (1998) emphasized figured worlds as being active and dynamic engagements by characterizing figured worlds as “not so much things or objects to be apprehended, as processes or traditions of apprehension,” “social encounters,” being “depend[ent] upon the interaction and the intersubjectivity” of people, and as “relating actors to landscapes of action” (p. 41). Many of the drawings similarly conveyed narratives of classrooms and environments in action rather than as static elements. This showed not only the components of figured worlds but also the relationships and interactions between components. These connections identified social positions, hierarchies, and the kinds of acts and outcomes that the participants gave significance to. In applying these to visual analysis (Kress & van Leeuwen, 2021), transactional relationships between rendered elements, people, and/or processes can constitute narrative vectors.

The drawings conveyed narratives through the physical positioning of accommodations in a classroom and which students used them (e.g., Figure 3). The drawings showed social hierarchies, such as by drawing the teacher larger compared to students (e.g., Figure 4). These hierarchies align with long-standing conceptions of schooling where teachers are characterized as figures of authority (Davis et al., 2015; Lodge, 2007; Weber & Mitchell, 1995). Such associations are apparent to preservice teachers (e.g., Phillipson & Forlin, 2011) and students as well, such as in drawings by young children that depicted teachers multiple times larger than students (Weber & Mitchell, 1995).
In the 1990s, Weber and Mitchell (1995, 1996) found that most portrayals of teachers by preservice teachers in their studies invoked traditional knowledge-transmission models of teaching. In comparing my participants’ drawings with Weber and Mitchell’s work, only five of the drawings in my research suggested aspects of traditional approaches, as evidenced by the positioning of the teacher pointing to or near a board and appearing to lecture about a topic. The board is a powerful symbol of traditional authority and schooling. It is the domain of the teacher and a conduit to their knowledge, doled out at their discretion. Incidentally, however, while boards were common among the drawings, no participant drew a dedicated teacher’s desk or their stereotypical adornments like an apple (Weber & Mitchell, 1995).

The findings suggest that preservice teachers’ perspectives have shifted since the 1990s to more varied teaching approaches, such as depictions that separate the teacher from the board (Figure 3), omitting the teacher altogether (Figure 9), or showing students working collaboratively rather than passively listening to a teacher. More recent studies (Farmer et al., 2016) of children’s drawings of classrooms similarly affirm greater prominence of collaborative and participatory approaches to education. This shift makes sense given contemporary trends in education toward more sociocultural practices and orientations (Davis et al., 2015; Goodley, 2017). Like Phillipson and Forlin (2011), most of the participants’ drawings and descriptions characterized the teacher as a central facilitator of inclusion rather than the centre of attention.

**Interactions and Discourses in Processes of Negotiating a Figured World**

In the collaborative drawing task, the resulting drawings depended both on the individual ideas the participants contributed and the interactions among the group. As students themselves, the figured world of teacher education and the associated social norms of the research context (i.e., BEd program at a Canadian university) mediated the interactions among the participants. In
this section, I discuss how these mediating factors may have shaped the participants in creating collaborative drawings of inclusion. This second level of analysis on interactions and discourses helps show how negotiations of figured worlds can unfold, which has pragmatic relevance, such as how teachers discuss, conceptualize, and implement inclusive practices in real-world schools and classrooms.

*Borrowing Words and Forming Local Coherences*

The representation activities were an opportunity for preservice teachers to put a stake in the ground about who they were or aspired to be as future teachers. In producing a drawing, they made a claim about what inclusion and disability should be, could be, or was. As preservice teachers, they also participate in the figured world of teacher education. Preservice teachers tend to seek recognition as future teachers. They laminate existing discourses in the profession, society, and their teacher education to form perspectives on inclusion and disability.

From my interaction analysis, there were several competing forces that influenced how the groups discussed and created their representations. First, within the figured world of teacher education, the findings suggest a desire by group members to appease the directions provided by the lab instructor. Second, there were attempts to establish coherence among the ideas discussed. Third, the groups leveraged individual perspectives and authoritative information sources in service of coherence.

Members of Group A and Group B both initially communicated attempts to create representations that aligned with the lab instructor’s directions. Within the figured world of teacher education, the participants valued appeasing the instructors. Jurow (2005) described similar instances of elementary school students prioritizing the world of schooling by making decisions about a science project to satisfy their teacher rather than in the interest of the project.
itself. The data for the present study does not suggest such appeasement efforts strongly influenced the drawings, but it was present, such as when Alex and Sue (Group A) gave value to aesthetic appeal by asking who was “artistic” among the group.

By design, the drawing activity was open-ended, apart from the instruction to go beyond accommodations and geographic inclusion (Appendix B), which meant that what constituted “a good representation [was] socially mediated, open to change, and negotiated within ongoing activity” (Danish & Enyedy, 2007, p. 21). Once the groups began discussing ideas, there appeared to be a transition from attempting to align with the lab instructors to a more insular discussion where the relevance and meanings of what was discussed only needed to make sense to the members of the group. They formed local coherences of meaning by drawing upon available conceptual resources, which varied in their relevance to inclusion or disability. For instance, as disparate elements, the competencies, treasure chests, and hearts referenced by Group A did not have explicit ties to the notion of inclusion. Similarly, the placement of a platform in the classroom by Group B could seem unusual without being tied to Dexter’s story about their uncle as a wheelchair user.

Fostering cohesion among the ideas was a process of sharing, discussing, and refining or rejecting ideas. This sometimes resulted in the massaging of ideas in service of coherence among the group. In Group A, Mike challenged Sue’s initial suggestion of treasure as knowledge and Sue lacked support from the other group members. However, even after shifting to treasure as competencies, Alex reinserted knowledge as part of competencies, which Sue supported by claiming competencies encompassed “everything.” As DeLiema et al. (2016) discussed, when students present ideas and claims that are challenged by others, “students do not abandon the entire set of resources with which they have assembled an explanation, but rather they examine
different pieces of the current assemblage to see which parts are inadequate…. Many of the same core knowledge resources are involved in the new assemblage” (p. 136). Some elements of the initial ideas are shed while others are retained or refined. Preservice teachers tend to seek recognition as future teachers, which can mean adhering to the language and expectations set out by the provincial curriculum. Such adherence reifies the language of the curriculum as language teachers should know and use. So, even if the members of Group A did not have a thorough understanding of the curriculum documents, they recognized its authoritative position and worked to integrate it into their representation.

Group B, for instance, debated including “outcome” in their signpost and its meaning shifted through interaction. Brit proposed the term outcome, and although Ann questioned if outcomes were the same for all students, Brit reframed and nuanced its meaning to be more relevant (i.e., the pathway or level of outcome could vary) to their context of interaction. Both groups, in the moment of interaction, worked to refine or reframe their ideas toward stabilizing a local coherence in why and how those ideas made sense as responses to the task even if the coherence might be less apparent to an audience external to the interaction (Gupta et al., 2016). These exchanges show how the invocation of knowledge and experiences is “emergent depending on what knowledge has been made relevant by the interaction” (DeLiema et al., 2016, p. 136).

Field Experience: Filling in and Renegotiation of Figured Worlds

Figured worlds are inherently dynamic and continuously renegotiated (Holland et al., 1998). People’s daily experiences and participation in a world shapes their interpretation and future participation in that world. The representation task was one instance of negotiation among the participants in how they interpreted and represented figured worlds of inclusion and
disability. Similarly, field experience was a space of negotiation where the participants had to reconcile their perspectives and understanding of inclusion and disability within real-world contexts, which sometimes challenged or opposed their views.

Field experience was a space where the complexities and previously unconsidered aspects of inclusion and disability surfaced and compelled the participants to, sometimes rapidly, improvise aspects of figured worlds. Entering any figured world does not expose or grant access to all aspects of a world. As Holland et al. (1998) noted, social positions and positional identities can preclude access to some or all of a world. Such access constraints can also shift with changes in identities and positions and/or renegotiations of worlds.

**Improvisation**

Figured worlds orient people’s day-to-day actions and interactions with others (Gee, 2011; Holland et al., 1998). Within a world are explicit and implicit assumptions about what happens there, who participates, and which acts are condoned (Holland et al., 1998). Participation in a world presumes adherence to, or at least knowledge of, such parameters. People’s maintenance of a world defines a world and how it functions, including social norms and obligations of people. For instance, a shared understanding that having one person speak at a time in a group setting allows others to listen more easily, but this norm can be pushed to an extreme where only one person is allowed to speak or certain people never speak.

Since people are constantly participants of multiple figured worlds, and often participating in them simultaneously, they must make choices about what to prioritize. For example, Holland et al. (1998) described how a Nepalese woman climbed up the side of a house instead of taking the stairs to maintain coherence with the figured world of the caste system. In the broader world of how a person goes from one floor of a building to another, scaling the
exterior of the building is not a typical or expected method. In this case, the woman prioritized the caste world and their lower caste positional identity within it through an extreme example of improvisation: “the sort of impromptu actions that occur when our past, brought to the present … meets with a particular combination of circumstances and conditions for which we have no set response” (Holland et al., 1998, pp. 17–18). Such improvisations are not entirely freewheeling or haphazard, rather “one’s history-in-person is the sediment from past experiences upon which one improvises, using the cultural resources available, in response to the subject positions afforded one in the present” (p. 18).

Such improvisation, as Holland et al. (1998) discussed, is an example of how sociocultural forces can impose priorities upon how people act in day-to-day actions. In the world of schooling, there are a myriad of assumptions about how schools function and how people participate within them. A common assumption is the teacher teaches and is an authority figure relative to students—an assumption that came through often in the participants’ drawings. Within this role, teachers are expected to plan and carry out learning activities and address problems or challenges as they arise. The assumption is that teachers will not give up or walk away when a challenge arises but will find solutions to it. They must often improvise solutions to maintain the coherence of the figured world of schooling.

During practicum, preservice teachers are in somewhat of an in-between world. Relative to students, they take on an authority role and, by design, carry out the roles and responsibilities of teachers. Relative to their supervising, partner teacher, preservice teachers are students themselves, which comes with its own set of assumptions. Partner teachers typically expect preservice teachers to demonstrate and practice teaching, which can include handling challenges
and unplanned situations. They must improvise solutions and decide which aspects of figured worlds to prioritize over others.

For example, Melanie’s modification of a math activity in response to social dynamic challenges signals priorities of how Melanie understood and wished to participate in the figured world of schooling. Melanie’s improvisation to switch to an individual activity was not novel or unfamiliar but the initial attempt at a collaborative activity did not fit Melanie’s understanding and taken-for-granted assumptions about how such activities should play out. Melanie ascribed value and significance to collaborative learning as a mode of activity over other approaches. This ascribed value likely stems from a combination of Melanie’s perspectives and teacher training. It is plausible Melanie also believed a collaborative activity would support a favourable assessment by their partner teacher in demonstrating contemporary teaching practices. Melanie used improvisation to maintain a positional identity as an authority figure that was expected to resolve the situation and proceed with the lesson. While less spectacular than scaling a building, this is analogous to the Nepalese women’s attempts to maintain a caste positional identity (Holland et al., 1998). Spaces for improvisation can also be spaces for conceiving alternative subjectivities and identities that challenge dominant discourses (Hatt, 2007).

Improvisation, however, may not resolve or address a challenge. At the time of the interviews, Lorianne remained uncertain of how to formulate a figured world of inclusion for students whose school attendance was in flux. Similarly, Laura struggled with supporting a student engulfed in fears of stigma and resisted supports or resources. Mergler et al. (2016), in their study of preservice teachers in Australia, found that some preservice teachers held positive sentiments toward inclusion but were also anxious or concerned about implementing inclusive practices. When they compared first and fourth year students, concerns were higher in fourth
year students without an inclusion minor. The authors speculated, after exposure to students with diverse needs in field experience, the preservice teachers without an inclusion minor felt unprepared or anxious about “what supporting diverse students in diverse classrooms actually entails” (p. 31).

Improvisation is inherently part of teaching and participation in a world. Analysis of improvisations sheds light on how people index and give priority to aspects of a figured world in a given moment.

**Renegotiating and Authoring Selves in Figured Worlds**

The participants’ creation of drawings contributed to the authoring of selves in figured worlds. Authoring, however, is not an arbitrary process; rather, it is always relative to the context and social milieu of where it occurs (Holland et al., 1998). The collaborative drawing task was an opportunity for preservice teachers to take the available conceptual resources of their training and make it their own. Making it their own is part of how a person responds to being addressed in a given circumstance (Bakhtin, 1981). As Bennett et al. (2017) described, “individuals construct (‘self-author’) themselves by appropriating and recombining the words that the contexts in which they act make available to them” (p. 250).

A theme across the participants’ field experiences was their shift in position and participation in the world of schooling. As one of their first formal teaching opportunities, the participants had to spend considerable time and energy authoring themselves into the world of schooling. Authoring is an intricate and ongoing process that stakes a claim about positions and perspectives while also responding to the preexisting norms and characteristics of the environment (Holland et al., 1998). Authoring is evidenced by dialogic exchanges of addressing and responding, that is, how “we are continually addressed by the world, through language,
discourses and cultural beliefs, and ... how we answer this addressing by ‘self-authoring’ an on-going narrative of our place in the world and its meaning” (Bennett et al., 2017, p. 251).

Field experience was an avenue for preservice teachers to move from discussing and imagining “play worlds” (Holland et al., 1998) in the drawing tasks toward active participation in the world and identifying themselves within it as future teachers. Put differently, as the preservice teachers engaged with and took on positional identities as future teachers, their positions were beginning to evolve into dispositions (Holland et al., 1998).

In responding to situations and circumstances of the world of schooling, the participants not only declared a stance and perspective but also engaged in the social negotiation of the world. As Avalos et al. (2020) argued, teachers have agency in how they participate in figured worlds, but the extent of their agency is also mediated by their social positions and identities. Power structures and histories embedded within figured worlds can also shape and overshadow intersecting figured worlds. For instance, the strong and deep roots of the figured worlds of high stakes testing and standardized exams can conflict with figured worlds of inclusion. As some participants experienced, particularly in higher grades, pressures of standardized exams can narrow opportunities for enacting figured worlds of inclusion that incorporate more flexible and equitable teaching practices (Avalos et al., 2020). Caraballo (2019) similarly wrote of figured worlds of achievement, in which student achievement and behaviours were judged against “White middle-class norms” (p. 1308) while positioning the cultural literacies and identities of students of colour as “incompatible with an academic context” (p. 1308). Moreover, Caraballo reported some teachers had lower academic expectations and less concern for such minoritized students compared to their white peers. Students with disabilities can be similarly marginalized by teachers (Shifrer, 2013). In field experience, preservice teachers take part in social
negotiations that can support, resist, and/or alter existing norms of a world. The actions taken by preservice teachers compel existing participants of a world, such as other teachers, students, and staff to respond. Each of these exchanges contributed to reinforcing or shifting preexisting norms as well as creating new ones.

In field experience, the address-response exchange was complex with many novel inputs (e.g., school culture, teachers, students) and potentially significant consequences (e.g., student learning, behaviours, evaluations of teaching). Each encounter and experience was a moment of the preservice teachers authoring themselves through responding to the addresses of other people and their surroundings. Each response contributed to authoring the world and themselves within it, in this case, as aspiring teachers. As Holland et al. (1998) noted,

> The world must be answered—authorship is not a choice—but the form of the answer is not predetermined…. Authorship is a matter of orchestration: of arranging the identifiable social discourses/practices that are one’s resources … to craft a response in a time and space defined by others’ standpoints in activity. (p. 272)

These responses were informed by the participants’ histories, available resources, and priorities of the moment. At times, such as Melanie’s switch to an individual task, this meant employing more traditional teaching approaches. The reasons for reverting to traditional practices vary, but Weber and Mitchell (1996) offered one explanation,

> Several preservice teachers in our study clung to traditional images, not because they actively agreed with them, but simply because they represented tried and tested methods of dealing with unknown and potentially threatening situations… emerging teachers are unsure of themselves and fight to retain almost any image of themselves that can be labelled “teacher.” (p. 310)

This aligns with the work of Holland et al. (1998) in how people author themselves in particular ways to convey identities that serve the purposes and motivations of the moment. As in Bennett et al.’s (2017) study of medical students striving to become “good doctors,” the participants likely sought recognition as future teachers. This can be further compounded by the placement of
preservice teachers in schools and school boards that may become prospective employers. Preservice teachers are not only seeking recognition as teachers but as prospective colleagues and desirable contributors to schools and school boards, which can temper a preservice teachers’ efforts or willingness to critique or change existing practices even if they are exclusionary (Walton & Rusznyak, 2017).

The tidal forces of the worlds of schooling the participants entered shaped their opportunities for contributing to the social negotiations of those worlds. In their field experiences, preservice teachers’ social positions offered access to such worlds but their positions within the worlds also constrained their participation. How the preservice teachers responded to situations seemed to be founded on three major areas. First, their life-long experiences of being students, which hold great power and durability by the simple fact of their overall time and contributions to a person’s life (Weber & Mitchell, 1996). Second, their teacher training, which encourages particular approaches and theories of education, but which is also dwarfed by the former in terms of time and active participation. Third, the “pre-populated…storylines, characters, or frameworks” (Boonstra, 2021, p. 3) of the worlds that preservice teachers inherited during field experience.

The participants’ descriptions of field experiences suggest considerable variance in how traditional or progressive practicum schools were. Being taught contemporary approaches but walking into traditional practicum environments is not new; “several preservice teachers indicated that, far from reinforcing the bold new images of teaching encountered in teacher education courses, their actual practicum experiences served mainly to reinforce traditional images” (Weber & Mitchell, 1996, p. 307). Even when preservice teachers made attempts to incorporate contemporary practices, they sometimes met resistance from students and/or
teachers. Simply put, “it’s not easy to swim upstream, especially when you are a beginning teacher” (Weber & Mitchell, 1996, p. 308).

Depending on their supervising partner teachers during field experience, the participants’ recognition as teachers could appear different. In schools or classrooms following more traditional approaches, the contemporary practices of their training may have seemed out of place, putting the participants in vulnerable states. Conversely, in progressive environments, contemporary practices were likely expected as part of recognition as a teacher.

Conjectures

A focal point of my research was the implementation of a set of representation activities which were motivated by several conjectures (Sandoval, 2014). The individual representation task was intended as a mediating process to support preservice teachers in thinking, synthesizing, and conveying ideas in ways beyond just text. As well, I conjectured representations could show relationships among rendered elements and abstract ideas that could be otherwise difficult to convey through text. The diversity of drawings, the nuances of elements rendered, and the relationships among people, objects, and environments depicted support the designed activity as useful in achieving the intended outcomes. Further, the drawing task was open-ended to encourage preservice teachers to bring in their own perspectives rather than restricting them to specific or formal ways of understanding inclusion and disability. As Rosebery et al. (2016) argued, “students’ diverse sense-making repertoires is a source of creativity in socially just teaching and learning in that it propels expansive consideration of entrenched ideas and settled perspectives about people, disciplines, phenomena, and their interrelationships” (p. 1575).

I conjectured that having preservice teachers share and discuss each other’s representations could support class discussions and be a resource for preservice teachers when
creating collaborative drawings. Data from Group A and Group B both support this conjecture as evidenced by the participants’ references to peers’ drawings and ideas discussed in prior classes in the course. The collaborative representation task expanded on the prior conjectures to consider the ideas of others and collaboratively represent inclusion. The instructions to consider inclusion in ways beyond accommodations and shared spaces was a design conjecture intended to further encourage preservice teachers to expand their thinking about inclusion. Group A’s drawing and discussions of various metaphors suggest this design element helped bring together ideas about inclusion that went beyond the course content. Group B depicted several accommodations but also debated the meanings and implications of terms that could be taken for granted, such as curricular outcomes. They also integrated personal perspectives and considered affective aspects of inclusion, suggesting the design helped shape the trajectory of the group’s discussions and drawing of inclusion.

Creating representations was a mediational process intended to support “heterogenous meaning-making practices” where diverse ideas and perspectives could come into contact “to generate new understandings” (Rosebery et al., 2010, p. 234). The findings show both groups engaging in such negotiations as they considered personal perspectives, ideas from peers, and concepts from external sources to create representations. The dedicated time and space for the drawing activities also helped position the preservice teachers as “participants in the use and … construction of expertise … in socially and culturally situated ways” (Calabrese Barton & Tan, 2010, pp. 190-191) rather than simply recipients of expertise.

One aspect of the design conjecture that I overlooked in the initial design was that, while the verbal discussion of ideas was collaborative, in both groups, only one person physically created the drawings. The conjecture could be refined for future iterations of this design to better
consider this; however, given the level of discussion in both groups, I do not believe having a single drawer was detrimental to the overall task.

**Summary**

Overall, the participants conveyed layers of understanding of inclusion and disability. The participants expressed inclusion and disability through a variety of storylines which aligned with historical and contemporary discourses in education. The storylines of individual representations reflected historic trends of discourses in education (Davis et al., 2015) ranging from individualized orientations of disability toward social and systemic orientations. These layers had overlaps rather than clean fault lines, which echoes general trends in education, such as the mixture of individualized supports within social learning environments.

The rendering of artifacts, such as wheelchairs or assistive technology, within the drawings also conveyed how the participants understood inclusion and disability. The relative positioning of students and teachers within the drawings also communicated relationships and positional identities within figured worlds of disability and inclusion. Often what the participants represented was shaped by their experiences of schooling or what they had seen during their field experiences. The participants gave legitimacy (DePoy & Gilson, 2011) to disability in multiple ways such as through depictions of bodily function and appearances, as well as in how they rendered the surrounding environments.

The construction of understanding was also a shared endeavour as the participants created collaborative drawings. My examination of group member interactions points to processes of negotiation toward developing local coherences of understanding. This brought into contact multiple perspectives and ideas while also introducing competing priorities of figured worlds of teacher education and participants’ positional identities as emerging teachers.
In their field experiences, the participants waded into the worlds of schooling while straddling the worlds of being students themselves, which shaped how they approached inclusion and disability in practice. As emergent teachers, the participants often engaged in authoring themselves within worlds of inclusion and staked claims about teaching, learning, and disability.
Chapter 6: Implications and Conclusion

The goals of my research were to implement a set of representation activities to surface preservice teachers’ perspectives as part of their teacher education and to investigate how preservice teachers constructed understanding of inclusion and disability using representations. To investigate this, I developed and implemented a set of representation activities within a BEd course. I tasked preservice teachers with creating and discussing drawings of inclusion individually at the start of the course and collaboratively mid-way through the course. The participants were video recorded during the creation and discussion of their drawings, and the drawings themselves were collected as data sources. Additionally, I interviewed the participants after they completed a four-week field experience, which followed the course. Over 14 weeks, the participants engaged in several opportunities to socially negotiate figured worlds of inclusion and disability as they worked through individual and collaborative drawings and their field experiences.

The individual drawings offered insight into how preservice teachers arrived at the course with their understanding of disability and inclusion. The collaborative task showed how preservice teachers negotiate understandings of inclusion and disability with peers, not unlike the discussions they may have with colleagues once they become teachers. Finally, the interviews offered insights into how the participants implemented and socially negotiated inclusion within real-world contexts.

I used a combination of visual, interaction, and thematic analysis of the drawings, collaborations, and interviews, respectively. Examined through the lens of figured worlds, the findings reveal a rich range of ways that preservice teachers conceived inclusion and disability. There were often nuances in how the participants understood common terms such as
collaboration or accommodation, their associations with practice, and their connections to the
notion of inclusion and disability.

This chapter discusses some of the successes and challenges of my research and offers
implications for practice and scholarly understanding.

**Successes and Challenges**

I was privileged to partner with a supportive instructional team, which afforded access to
a large-enrolment course with strong relevance to my research topic. My past involvement with
the course also meant I was familiar with the course structure and content, so I could leverage
this knowledge in developing the representation activities. I was fortunate to have a strong
recruitment response, with 197 preservice teachers consenting to some aspect of the study,
resulting in 32 participants with comprehensive data sets. This offered a rich and varied pool of
data to analyze.

The representation tasks also succeeded in surfacing a range of perspectives on disability
and inclusion. The findings suggest many preservice teachers put considerable effort into
representing and describing their understandings of inclusion. Reviewing the drawings during the
course also proved useful for myself and the instructional team in addressing misconceptions and
driving class discussions about inclusion and disability.

Implementing the representation activities was also successful in shifting the overall
course from a clinical to a more holistic and sociocultural orientation toward inclusion and
disability. With the representations and subsequent in-class discussions, I asked preservice
teachers to step back from conceptions of inclusion and disability that revolved around
accommodations and individualized supports to consider social and class-wide approaches and
implications.
Regarding challenges, the high volume of collected data proved cumbersome to parse. Further, the collection of the IPP and UDL coursework proved less useful than anticipated and could not be easily analyzed or compared to the other data sources, which resulted in its exclusion from the data sets.

Another challenge I observed in the recordings of the individual representation task was that the participants would share their representations with peers but seldom engaged in deeper discussion about the ideas presented. This limited the usefulness of the recordings of these sessions. Although not detrimental to my study, there was less consideration and discussion among the participants that the instructors and I hoped. The task was refined in the following year to more explicitly invite preservice teachers to engage with each other’s ideas rather than simply sharing their ideas.

**Implications for Practice**

Based on my research findings, I have identified three implications for practice, which are detailed in the subsequent sections. The first acknowledges that preservice teachers navigate a range of figured worlds and addresses these intersections as preservice teachers learn about disability and inclusion. The second implication extends my ongoing efforts to integrate a more holistic perspective of inclusion and disability within the course. Specifically, I propose drawing upon critical disability studies scholarship (DePoy & Gilson, 2011; Goodley, 2017) to further support preservice teachers in developing awareness and criticality of how they and the broader education system approach inclusion and disability. The third implication addresses the value and potential for using representations to explore figured worlds and to support students in considering various equity related topics.
Navigating Figured Worlds

A finding of my research is the recognition that preservice teachers must contend with many competing forces and figured worlds, such as their past experiences with schooling and being students, participation in teacher education as postsecondary students, and norms and practices of their field experience schools. Each preservice teacher begins their teacher training with a range of experiences and perspectives on schooling, inclusion, and disability that informs how they approach inclusive education.

My research findings suggest the drawing activity was a useful tool for supporting preservice teachers in expressing and considering various figured worlds. However, as Esmonde (2014) commented, discussing a figured world at an arm’s length with limited or no direct participation can unintentionally perpetuate a stereotypical understanding of a world (e.g., associating disability with wheelchairs). A refinement to the drawing task would be to provide more explicit scaffolds or prompts that ask preservice teachers to consider their positional identities relative to a world, the sources of their ideas, and their implications. From a critical disability perspective (Titchkosky, 2003), this could involve interrogations of which ideas and voices are being privileged over others and how power structures of hegemony are potentially perpetuated (Esmonde & Booker, 2017). It could also be useful to iteratively engage with preservice teachers’ understanding of disability and inclusion throughout their training to support them in continuing to evolve their perspectives over time.

At the same time, critiques of perspectives and sources should not be taken up as a form of shaming preservice teachers for not arriving at the course with sophisticated understandings of inclusion or even for invoking stereotypical notions of disability. The drawing task is intended to support a generative discussion about current understandings of disability and inclusion, as well
as to consider possibilities and more socially just futures such as through play worlds (Holland et al., 1998). Building on the task could also include scaffolds for how preservice teachers could contend with the competing forces of figured worlds or tensions within worlds, such as government mandates to foster inclusion (Alberta Education, n.d.) while being required to use deficit-oriented models of disability.

**Adopt a Critical Disability Studies Lens**

The drawing activity could hold more power and relevance by being coupled with the adoption of a critical disability studies lens in the course. Approximately one-third of the course is dedicated to developing an individualized program plan for student needs, but almost no time is spent interrogating the histories of such approaches and the problematic consequences of medicalized and deficit-oriented approaches to disability (Goodley, 2017; Titchkosky, 2003). The current education system compels preservice teachers to understand and operate within a system built upon these traditional approaches. As Connor (2015) argued, preservice teachers should “not allow special education to remain an unquestioned field into which they are being enculturated, but rather as a dynamic force that—no matter how well intended—can do more damage than good” (p. 128). For example, frameworks such as the Index for Inclusion (Booth & Ainscow, 2002) could be used to interrogate school policies, cultures, and practices around inclusion, identify opportunities for improvement, and identify the values, perspectives, and priorities within a learning environment.

The findings suggest the drawing activity offers one avenue for preservice teachers to develop an awareness of their understanding of inclusion while also questioning current practices and perspectives. In addition, Connor (2015), in teaching an inclusive education course, offered two practices to further support education students in developing a critical awareness of
disabilities. First, students scrutinize a film of their choice with a critical lens and document how disabled bodies are presented, how normalcy is presented, and what messages the representations convey about broader society to viewers. Connor reported that students often recognize how poorly disability is represented in media, such as being “sub-human,” (p. 131) associated with illness, needing containment in asylums, or as comedic plot devices. Goodley (2017) similarly noted how disability is often conveyed in media through a lens of inspiration to others or tragedy, glossing over the rich lived experiences of people with disabilities. In my research findings, common portrayals of people smiling and happy within inclusive environments also show simplifications of disability and students’ experiences within such spaces.

Second, Connor (2015) had students do a 24-hour cultural analysis of disability by observing and documenting how disability manifested in their daily lives. Students commented on how disability appears in public transit, accessibility of buildings and services, depictions of ableism, and uses of derogatory terms (e.g., retard, handicap). I believe such activities could complement the drawing task to identify figured worlds of disability and inclusion and support preservice teachers in developing a critical awareness of disability as something that impacts daily life and goes beyond the classroom. As well, developing awareness is a step toward developing disposition (Holland et al., 1998), which shifts accessibility and inclusion from being an afterthought or “special” consideration toward being integrated and embedded within everyday teaching and learning practices. Supporting the development of a disposition is key in dismantling ableist practices that are “progressive without progressing” (Titchkosky, 2019, p. 287). Disability manifests in daily life in many forms, so developing a critical disability disposition means proactively fostering accessible and equitable learning opportunities and being receptive and responsive to dismantling inequities without hesitation. Such a stance contrasts
with, for example, the narrative Titchkosky (2019) described of having to convince a major academic institution and transit authority that making a subway station accessible should be a priority and not shoved into the background as “a problem for the future” (p. 285).

In terms of how and when teacher education programs should address inclusion and fostering a critical lens, there remains debate among scholars and teacher educators. Some seek to infuse inclusion throughout a teacher education program, while others use a stand-alone inclusion course approach (Walton & Rusznyak, 2017). The former has the benefit of framing disability and inclusion as an integral aspect of all teaching and learning, rather than a discrete afterthought or additional consideration (Forlin, 2010). However, the infusion approach also relies heavily on the design and instruction of a compatible overall education program; infusing inclusion everywhere can also risk inclusion appearing nowhere. Loreman (2010) found success using the infusion approach once teacher educators had developed greater expertise and inclusion was explicitly addressed within courses, such as through specific tasks and assignments. Walton and Rusznyak (2017) also cautioned that the infusion approach “is unlikely systematically to develop [preservice teachers’] conceptual tools for interrogating the inclusive and/or exclusionary practices they observe at work in schools and in broader aspects of society” (p. 233).

In contrast, the stand-alone approach has the advantage of making inclusion “an explicit object of study for pre-service teachers, providing an opportunity for the systematic development of the concepts of inclusion, exclusion and marginalisation and the literature and discourses associated with the field” (Walton & Rusznyak, 2017, p. 233). This gives time and space for teacher educators and preservice teachers to make a concentrated examination of disability and inclusion. Activities such as the reviews of media and culture described by Connor (2015) and
the representation tasks of my research may also be better suited to stand-alone courses to enable deeper engagement with disability and inclusion. At the same time, the stand-alone approach risks perpetuating disability and inclusion as an add-on or as separate from everyday teaching practices. I believe a hybrid approach may be needed where a dedicated course can engage disability and inclusion deeply, in conjunction with explicit considerations for disability and inclusion infused throughout a teacher education program as preservice teachers develop skills and expertise across subject areas and contexts.

Adopting a critical lens can also mean expanding figured worlds of inclusion and disability to more varied types of learning activities and environments. Specifically, how disability and inclusion are conceived in “non-core” and elective subject areas, such as music, fine art, and physical education. Outside of core subject areas, students with disabilities are often under-considered in preservice teacher training (Begeske et al., 2021; Cramer et al., 2015), which can effectively erase students with disabilities from figured worlds associated with such spaces. Without considering such students, ableist notions of legitimate participation can be perpetuated. For example, Boonstra (2021) described a Black kindergarten student with autism being disciplined and removed from a music class for “‘rolling on the floor’ instead of participating in rhythm activities,” which the teacher justified as “unsafe” (p. 12). Rather than the teacher providing the student with “feedback or supportive scaffolding” (Boonstra, 2021, p. 12) so they could rejoin the music class, they were scolded, physically restrained, and labelled as a behaviour problem. Such acts “that dehumanize, discredit, and demonize Black man and individuals with disabilities” (p. 12) were commonplace in the figured world of kindergarten that Boonstra described. In that world, students’ identities and recognition as legitimate participants was aggressively tied to race and compliance with normative behaviours. Disability was not seen
as something to support but a problem “warranting regular surveillance, intensive adult intervention, and physical control” (Boonstra, 2021, p. 15). While none of my participants described such extreme examples, as emerging teachers, applying a critical lens to their future practices and school environments can mitigate perpetuations of exclusion and marginalization across a range of learning activities and environments.

**Representations as a Pedagogical Tool**

My research shows possibilities for using representations to explore figured worlds and for preservice teachers to use them as artifacts to think with in negotiating and constructing an understanding of worlds. The representation activities could be strengthened by being coupled with discussions of the histories of rendered artifacts and the potential inequities they can perpetuate. There can be value in supporting preservice teachers to develop an awareness of visual grammar and the ideas and perspectives visuals can convey, such as when viewing media or depictions of disability in daily life (Connor, 2015). Further, the activity can allow preservice teachers to reflect on their understanding of disability and inclusion in relation to their training and expected practices (Phillipson & Forlin, 2011). For example, the drawing activity afforded an explicit space and opportunity for Paul to critique the medical nature of IPPs and express a desire to approach inclusion from a more empathetic orientation.

Creating representations can complement approaches taken in disability studies to produce counter-stories that “openly challenge the dominant narrative trends …[to] expand options for depicting disability experiences” (Mitchell & Snyder, 2001, p. 164). This is similar to Holland et al.’s (1998) uses of play worlds to consider alternative possibilities and futures, such as the Nepalese women who created and performed songs to reflect the worlds they desired. In the context of disability, counter-stories represent the stories untold and obscured by dominant
discourses. Yet these counter-stories are no less real or relevant to those experiencing them. In this way, counter-stories can serve to challenge assumptions and hegemony perpetuated by dominant groups. Representations, particularly those created by those of non-dominant groups, could be conceived as a form of activism to visibly represent countering perspectives and worlds that oppose practices founded in historic traditions of prejudice and deficit. This makes representations useful to a range of contexts and topics, not just that of disability and inclusion.

Implications for Scholarship

In terms of scholarship, I identified three implications. The first discusses the potential to use representations as a methodological tool in examining figured worlds. The second advances a theoretical framework to describe the interactional processes that the participants engaged in to develop collaborative representations of inclusion. I complement previous work on interactional analysis to consider how the participants developed and used local coherences to form understandings of inclusion and disability in creating their representations. In the third implication, I discuss ways in which scholars of Learning Sciences and Disability Studies could and should forge connections in their work.

Representations of Figured Worlds

Figured worlds are germane to the Learning Sciences as a useful tool to examine people’s orientations to daily life and participation in particular contexts. Representations hold power in communicating social norms and relationships of a world through conventions of drawing and analysis using frameworks such as visual grammar (Kress & van Leeuwen, 2021). The findings show how representations complement existing methods to investigate figured worlds.

Given its anthropological roots, figured worlds have often been analyzed through ethnographic methods (Holland et al., 1998) to observe how figured worlds manifest in the real
world. For example, Urrieta (2007) studied identity production of Mexican Americans through observation of daily activities and life history interviews with participants. Similarly, Hatt (2007) used interviews and observations over several months in a study of urban youth in figured worlds of smartness. Scholars have also examined how people engage with figured worlds as a social practice and form identities within them. For example, Calabrese Barton and Tan (2010) observed youths’ participation and identity formation in figured worlds of science in a community club. In another study, Jurow (2005) observed how students participated in figured worlds of architecture, mathematics, and the classroom. The participants’ drawings of classrooms in my research have parallels to how the students in Jurow’s study created drawings of a research station suitable for Antarctica. My research complements Jurow’s study by examining not only how students engaged in the world of the classroom where they created the drawings, but also the world depicted in the drawings. Jurow hinted at aspects of social dynamics in the designed world (i.e., who lived in the largest room of the science station), but this did not appear to be the focus of the study.

My research also complements a study by Esmonde (2014) about two cases of how students engaged in social justice oriented mathematics activities. In the first case, students examined distributions of wealth and had to propose solutions to wealth disparity. In the second case, students compared the distribution of community resources in relation to poverty. In the second case, students looked at the geographic distribution of community resources (e.g., distance to a grocery store) and discussed potential social identities and positions of residents in high and low poverty communities. This placement of resources and who uses them has parallels to my research in how participants depicted classrooms and resources within them (e.g., accommodations placed around the perimeter of a classroom).
Each of these studies examined figured worlds as contexts of meaning that encompass recognizable acts, actors, and relationships, and give significance to particular outcomes (Holland et al., 1998). My research shows how representations can offer a way to examine not only how people participate in figured worlds, such as students in a classroom, but also how they construct and negotiate understandings of figured worlds. Figured worlds inherently encompass multiple people doing multiple things oriented to each other in particular ways. Classrooms similarly often include students and a teacher engaging in a variety of tasks and activities, possibly simultaneously, with relationships among various elements of a class. Using more linear data sources and methods of analysis, such as interviewing, make it challenging to analyze the simultaneous happenings of a world (Brooks, 2009). A representation helps overcome this challenge by showing how multiple people and rendered elements interact and relate to each other (Lodge, 2007). For instance, Sara drew 16 people in their drawing but only mentioned a few students from their practicum in the interview and did not describe what the rest of the class was doing in each moment.

My research shows how representations can be an avenue to examine figured worlds. Studying people creating representations complements traditional methods of observing people participate in a world by also gaining insights into how people understand the world themselves and convey worlds in their own ways. Representations can also strengthen other types of data sources and reveal subtleties that could be otherwise unconsidered or not conveyed through other data (Towers et al., 2018). For example, Towers et al. (2017) noted how drawings created by youth about their emotional experiences with mathematics “added considerable fidelity to the oral and written data” (p. 167) and, in some cases, revealed contrasts between the data sources. Like Towers et al. (2017) and Towers et al. (2018), the drawings in my research showed social
relationships, such as whether students were depicted individually, working with others, or interacting with a teacher. Such depictions can offer insight into how students understand and participate in figured worlds. Representations can be examined through frameworks such as visual grammar (Kress & van Leeuwen, 2021) to identify social relationships, hierarchies, what happens in spaces, who participates, and how (Prosser, 2007). Representations can also be valuable in enabling participants to convey and communicate their ideas and perspectives that could be otherwise challenging in written or oral modalities (Weber & Mitchell, 1996), especially for people with disabilities that impact communication through such modalities (e.g., dyslexia; Titchkosky, 2003; Prosser, 2007).

**Interactions and Local Coherence**

While my research did not focus on the analysis of knowledge in use or conceptual change (e.g., diSessa et al., 2016), the participants’ discourses and interactions while creating representations showed instances of how interactions sculpted understanding of inclusion and disability. This work contributes to existing scholarship on how interactions shape learning (Gupta et al., 2016) and representational practices (Danish & Enyedy, 2007). While visual grammar can offer a glimpse into interpreting representations and their implicit and explicit meanings, it is not privy to the interactions and social negotiations that led to the final representation. Even small or subtle external nudges can have important impacts on students’ representational trajectories.

As Danish and Enyedy (2007) found,

In a negotiation of a representation, an individual’s goals, knowledge, and existing competencies come into contact with and are transformed by the norms of the community, divisions of labor, other people’s ideas, the tools at hand, and the contingencies of the situation. (p. 31)
They further identified examples of mediating factors such as individual and group goals, individual understanding, personal preferences, the physical environment and available tools, social structures, and local norms. Such factors similarly apply to my research and, I argue, reflect what people bring into a figured world and how they participate in it. These factors function as a dynamic, inseparable constellation that mediates the processes of representation (Danish & Enyedy, 2007).

**Figure 29**

*Interactional Processes of Local Coherence*

I summarize the observed interaction processes in Figure 29. Going from left to right, (1) participants bring individual ideas, experiences, and perspectives into the group. They begin by debating ideas for what to represent until they latch onto an idea which is further developed. I use latch point (2) rather than convergence point since convergence could imply a merging or joining of ideas, but sometimes ideas are offered and latched onto without direct connections to other ideas being contemplated. In Group A, this latch point appears around when the group decides competencies will be their central idea. At this point, the group’s negotiations become temporarily insular, and the meanings form a (3) local coherence (Gupta et al., 2016). This is not unlike play worlds (Holland et al., 1998), where in the bubble of the group, the figured world
that the participants represent must only respond to itself. It is not yet meaningful or under the scrutiny of the world outside the group.

Within the group’s interactions, how preservice teachers navigate decision points seemed to be based on unspoken priorities, such as appeasing the other group members, use of authoritative sources, and authoring selves as inclusive teachers. For example, Group A interpreted the instructions as a restriction to drawing a classroom, knowledge was rejected due to lack of group support, and competencies were given authority as being part of the curriculum. During this negotiation, external factors penetrated the insulation to mediate the discussions, such as figured worlds of teacher education, appeasement of the instructor, and norms of the environment. After and/or during the stabilization of local coherence, the group externalizes their thinking as a representation. This externalization process is subject to (4) meditating filters—in this case, the available resources (e.g., markers, paper, time) and skills of the drawer(s). The resulting (5) representation is necessarily partial in conveying the many minute decisions and reasonings underlying each rendered element. This local coherence framework complements existing knowledge, interaction scholarship (Gupta et al., 2016) with added specificity in the production of representations of figured worlds.

**Connections Between the Learning Sciences and Disability Studies**

This study complements both learning sciences and disability studies scholarship in examining how preservice teachers convey narratives of disability. Interwoven within representations are narratives of power. Creating representations is not a neutral act: “the construction and dissemination of artifacts can be an expression of power” (Esmonde, 2017, p. 9) which validate and ascribe meaning to people, objects, acts, and relationships. When representations depict students with accommodations placed at the literal boundaries of the
classroom (e.g., Figure 3), this disempowers students from the inward trajectories suggested by theories of learning dependent on progressively increasing levels of participation in communities (e.g., Lave & Wenger, 1991) or transitions to more equitable positional identities and dispositions (Holland et al., 1998). Representations can be a mediational means (Esmonde, 2017) to examine how power is wielded and conveyed by educators in terms of disability and inclusion which has long been an area of focus in Critical Disability Studies (Goodley, 2017) and is gaining attention in the Learning Sciences (Gutierrez & Stone, 1997; Smagorinsky et al., 2017).

Rendered elements with representations are themselves artifacts that signal systems and histories of power (Vossoughi, 2014). For example, the depictions of students using a wheelchair or other accommodations obscure the trials and tribulations of those students. They obscure the necessary privilege and access to resources and funds that may not be available to other students. They obscure the longitudinal educational experiences of such students and how they influence their participation in learning at a given moment. They obscure the potential hours spent in doctors’ offices, filling out paperwork to “prove” their disabilities, explaining their needs to teachers, and circling buildings to use accessible doorways and washrooms (Titchkosky, 2008). Such experiences fundamentally change how students interact with peers and develop the critical social relationships that underpin sociocultural theories of learning. Such issues are well known in Disability Studies but have been historically less considered in the Learning Sciences. When learning scientists develop theories and innovations of learning, they “must consider the ways in which broad systems of power and oppression are embedded in the histories of mediational means” (Esmonde, 2017, p. 17). Critically, however, learning scientists must not treat such histories as tragedies, or conversely inspirations (Titchkosky, 2003), but as one of the many possible histories of students and teachers when developing theories and innovations of learning.
Future Research

One future avenue for research could involve a deeper discussion with preservice teachers about the production of representations themselves and more time to create them. Similar to Phillipson and Forlin’s (2011) work, the representation activities could take place over multiple sessions to allow preservice teachers more time to consider and represent their understanding of inclusion and disability. The representations could also expand to mediums of artistic production, such as sculpture, performance, or video. Each of these have their own histories and conventions of representation akin to a visual grammar (Kress & van Leeuwen, 2021). Such activities could also be supported with training or greater attention to the production and interpretation of representations, so students could engage in the task more deeply. This type of work could be studied through ethnographic and more in-depth visual analysis methods.

Also of interest could be having students (particularly those with disabilities), administrators, and support staff create representations of inclusion to better understand how their perspectives complement that of teachers. As participants described from their field experiences, schools are communities, each with their own cultures and norms that make up localized instances of figured worlds. Examining the perspectives of these stakeholders, such as with ethnographic and/or narrative methods, could give insight into how social positions, relations of power, and roles within learning communities shape their understanding of inclusion and disability. Similarly, in-field observations of how members of a learning community enact inclusion could surface nuances of how figured worlds play out in the real world.

Further, the representation activities could be relevant and useful to other kinds of figured worlds. For instance, related equity topics around race, gender, and sexual orientation or student participation in disciplinary worlds such as science and history. People participate in multiple
worlds and hold multiple identities, so future work could examine the interfaces and overlaps among them.

**Conclusion**

Inclusion and disability affect every classroom, teacher, and student. Preservice teachers hold a plethora of insightful and promising ideas about inclusion and disability shaped by personal experiences and participation in figured worlds. As they begin their careers, they enter figured worlds with existing norms and interpretations of inclusion and disability. Navigating and managing competing demands, ranging from policies, support structures, school cultures, personal perspectives, and aspirations is complex. Representations offer one way to surface and examine how preservice teachers reconcile these forces and develop an understanding of inclusion and disability to inform practice. My research shows the nuances of how preservice teachers progress in developing an individual understanding, a collaborative understanding, and a situated understanding of inclusion and disability.

The Learning Sciences was founded on investigations of learning within real-world contexts and paying close attention to sociocultural forces of learning. My research contributes to the evolving scope of learning sciences scholarship to consider how issues of disability, inclusion, and equity more broadly are embedded within learning. Only through holistic considerations of learning can education support learning that is robust and equitable for all students.
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Appendix A: Focus Group Interview Protocol

1. Tell me about your drawing
2. What are the most important features?
3. What influenced the drawing?
4. Is there anything you wanted to draw but couldn’t/didn’t?
5. What was it like coming up with a drawing as a group?
6. Was there any tension in what should be drawn or why?
7. What elements, if any, of your drawing ended up in the group drawing or influence it?
8. How does your drawing relate to your IPP?
9. How does your drawing relate to your UDL lesson plan?
10. How has the drawing activity influenced your understanding of disability and inclusion?
11. What has inclusion looked like in Field Experience?
12. Did you notice an incident where a student was marginalized?
13. What has it been like trying to implement what you learned in courses, your ideas, and perspectives of inclusion in the classroom?
14. What has surprised you about inclusion in Field Experience?
15. What challenges have you noticed about inclusion in classrooms/schools?
16. How did the drawing activity influence your practice in Field Experience?
17. Would you draw anything differently after being in Field Experience?
Appendix B: Drawing Prompts

Lab 1 drawing prompts for individual drawings:

- Draw/sketch what you think inclusion is (within a learning context) (there is no right answer/drawing)
- What might inclusion look like, sound like, feel like?
- What does it mean to have unique learning needs or be diagnosed with a disability?

Lab 5 prompts for reviewing other preservice teachers’ drawings in small groups:

- What themes do you notice?
- What strikes you about other drawings?
- How do other drawings compare to your ideas?

Lab 5 drawing prompts for group drawings:

- Collaboratively, draw an inclusive environment
- Think about UDL, the IPP, classrooms as a system, and social aspects of learning
- How can you go beyond just accommodations or geographic inclusion (same physical time/place)?
- How can you negotiate the various ideas in your group to come up with one drawing?
Appendix C: Representation Template

Figure C1

Template for Representation Activity Drawing (Page 1)

Part 1: Create a drawing in response to the prompt

 CODE: 1001

Figure C2

Template for Representation Activity Drawing (Page 2)

Part 2: Briefly describe and explain your drawing (5-7 sentences).

Why did you draw what you did? How would you describe your ideas to someone that did not have access to the drawing?

 CODE: 1001

Part 3: What ideas or experiences influenced your drawing?
(e.g., personal experiences, friends, family, news, social media, coursework, field experience, Alberta education)

First Name: ___________________________  Last Name: ___________________________  UCID: ___________________________
Lab Instructor: ___________________________  Lab Section: ___________________________
Appendix D: Pilot Representation Activity Framework