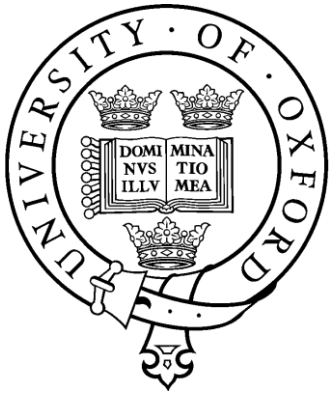
Disabilities and the Digital Divide: Educators perspectives of technology and media usage in transition services



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Abstract

Children in the special education system in the United States have the option to enter into transition programs as a form of post-secondary education. The pathway to these programs involves various meetings across the lifespan of these students' academic careers and involves not only the student and teacher, but the parents, transition coordinators, and various other individuals that determine the best path for the student. These programs provide necessary life-skills for independent living, but also provide job skills and training in order to best equip these students to enter the job market after their time in these programs. The state of Oregon is no exception to these occurrences. Given the evolving expectations of workers and their digital skills, this work sets out to investigate the digital opportunities for special education students in the state of Oregon.

Through questionnaires and conversations with individuals who took part in these meetings, this work utilizes the capabilities approach and theories rooted in social justice to observe the opinions of educators and other figures present in special education. This work provides a glimpse into disabled students' opportunities for digital engagement and the training and skills offered to these students through transition services in the state of Oregon. While current research observes issues of disability, transition services, and the digital divide for disabled people in their own individual rights, this paper provides a unique and distinctive insight to the intersection of these issues.

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Chapter 1: Introduction

In the United States, 41.1 million or 12.7% of people identify as being disabled (U.S. Census Bureau, 2021). Of this 41.1 million, 7.2 million or 15% of all public-school children identify as having a disability (National Center for Education Statistics, 2022). For these youths, special education services provide an invaluable resource that shape their trajectory as both students and as community members (Wei & Marder, 2012). Through various federal polices, but most importantly the Individuals with Disabilities Education Act, individualized education programs are put in place for learners, which dictate their involvement in either general education, inclusive education, or special education settings (Hossain, 2012; Bray, 2014). It is in these setting that students will receive their education, however, these experiences impact more than just their attainment of formal knowledge. They impact their understanding of social hierarchy and their place in the world (Carrier, 1983; Worth, 2013).

1.1 Positionality Statement

Before venturing in the heart of this research, I believe it to be necessary to state my place in this work. As a woman with Tourette's, my experience as a disabled person shapes my thoughts and opinions towards systems of inequality that marginalize my fellow disabled community members. Due to the sensitive matters that encircle topics of disability and educational inequity, I found it a challenge to separate my own opinions and beliefs as a disabled person from the ideas and sentiments expressed in the research that details experiences of other people with backgrounds similar to my own. In order to distance myself from these subject matters and to provide an objective lens to this research, I sought to research on systems that were not a direct impact on my own trajectory as a student. With this motivation in mind, I sought to interview people who were a part of the special education sphere that witness and are a part of these systems. While I had previous knowledge of this sphere due to my own work experiences, the opinions and views represented from my participants provide experience and knowledge that I did not have due to my limited time and role within the special education system.

1.2 My Previous Role in Oregon Special Education

Prior to arriving at the University of Oxford, I sent a year working as a personal support worker (PSW) for a 19-year-old boy and a 20-year-old girl in the state of Oregon. During this year, the COVID-19 pandemic heavily impacted the educational experiences of both of these students. The boy was in his final year of high-school and was in the midst of his transition over to the local community transition program available in his town. The girl was entering into her second year of her transition program, yet she had never been physically present in the classroom due to the pandemic's presence. Given my role as a support both in the education and personal lives of these people, I found myself navigating through education, life skills practice, and Individualized Education Plan (IEP) meetings advocating for my students to be able to achieve the goals and ambitions that they set for themselves.

His experience pointed out facets of this system I wanted to further explore. Through an interaction with teachers at the school they attended, I learned there was a lack of digital technology and media that was available and targeted at this age group of disabled students. The videos being watched during job interview training, the assignments and curriculum taught to build change counting skills were all targeted at a much younger audience or at an able-bodied audience. Talking with the parents of these students reiterated the need for new and better suited technologies for these students. With this work, I have set out to investigate if the policies, current technology environment, and our social world is currently best serving the needs of disabled students and how teachers and parents feel about the current iteration of transition programs and their ability to provide job skills for these students.

In addition to my role as a PSW, I am now on my way to becoming a certified special education teacher. With my limited work in the classroom as the primary provider of special education services to students and my experience as a researcher, I have found there is a lack of research evidence and resources to provide empowering uses of technology for disabled students in special education settings. Through the completion of

this research, I hope to inspire a call for policy changes within the United States special education system and for a reassessment of how we conceptualize disability throughout our various systems and institutions.

1.3 Outline of Dissertation

Chapter 1 has provided the necessary background for the following chapters. Chapter 2 will go into a further discussion of existing research and will situate the gaps that exist and have been previously discussed in chapter 1. Chapter 3 will look at the methodology of this study, providing the theoretical framework, research design, method of sampling, participant selection criteria, method of data collection, method of data analysis, ethical considerations, and limitations of the study. Chapter 4 will provide the findings of my research, as well as a discussion about these findings in relation to the questions, gaps, and aims posed. Chapter 5 will provide a conclusion to this study, discussing areas for further study and final remarks about these issues.

Chapter 2: Literature Review

This paper will explore the relationship that exists between disabled students in transition programs in Oregon and technologies they use or need to use in their careers. While both transition programs and technology have both been widely researched, the intersection of disability, transition programs, and technology has not been as deeply explored. In order to ground this study in the current research, I have divided this section into five topics: definitions of disability, special education in the United States, United States transition programs, the digital divide, and employment outcomes of transition programs.

Firstly, I will set the stage by exploring the models of disability and two models that will shape the discussion for this research. I will then venture into policy at both the federal and local level. Policies are what have shaped the way the students with disabilities engage with the educational system in the United States and make their way into transition programs. Next, I will then look at the two models of technologies that are most associated with disabled people: assistive and accessible technologies. These two models shape the way that students interact with technology and play into the biases shaped by society. Lastly, I will explore the outcomes of transition programs. Looking at both the federally mandated goals of transition programs and the Oregon Youth Transition Program's goals, I will explore the priorities and career growth opportunities in these programs.

2.1 Models of Disability

When discussing disability, there are various models that are used to define the term. The medical and social model of disability tend to be the most common models used to provides the definitions (Marks, 1997; Haegele & Hodge, 2016). These models utilize different definitions and conceptions of disability in order to describe the role that this status plays when engaging with the surrounding world. One issues that exists with these definitions, however, is that "in attempting to produce a clear categorization of disablement is that the capacities and values given to bodies, learning 'abilities' and

emotional experiences are not only contested but highly changeable" (Marks, 1997, p. 85). Throughout the lifespan of a person, disability status may change. From the severity of a disease to its actual presence in the body, all of these factors can and do change over time. Marks argues that these 'liminal' terms are not appropriate to define disability, as this status is flexible and can change over the course of time (1997). For those whose status does not change, however, she argues that these terms are still unfit for usage. She states, "they are not seen as having mundane, ordinary lives, with concerns about relationships or work. Disabled people are reduced to their impairment" (Marks, 1997, p. 86). By defining the person by their impairment and assigning their value to this disability, it erases the individual and their humanity from their identity. Focusing on the disability as the defining piece of who that person is, not who they are outside of that role (Shakespeare, 1999). The definitions of disability are vital to this research, as they provide a lens in which we can use to evaluate the technologies and education being provided. They allow us to assess whether these things provide a solution to the limitations of a disability or whether they are a means of allowing access for all.

2.1.1 Medical Model

The medical model is often used to define disability and disabled people in "a strictly medical point of view" (Brisenden, 1986, p. 173). This model identifies characteristics of an individual that set them apart from the norm and uses the terms of these characteristics to define the individual. This frame of mind takes away the individuality of the human and their disability, and instead seeks to categorize the experience of that person into a defined box. The trouble with this form of definition is that it takes away the unique experience of that person and their own relationship with their disability for the sake of having a clear-cut word that attempts to describe their being (Marks, 1997). This model strips away the human from the disability by employing a label that claims to say more about that person than they can say for themselves.
In an article by Reynolds speaking about the medical model and ableism, he states, "I argue that the reason the medical model of disability remains so gallingly entrenched is

due to what I call the “ableist conflation” of disability with pain and suffering” (2017, p. 149). The issues that exist with the medical model of disability is that it strips away the humanity from the individual and instead replaces their being with a condition. The World Health Organization defines disability, “as any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being” (Marks, 1997, p. 87). Viewing disability in such a fashion implies that there is something that inherently needs to be fixed in order for the individual to be a normal human being. This model is not only applied as a way to define disability but is also a utilized in technology as a way to provide ‘fixes’ for these impairments.

2.1.2 Social Model

The social model of disability seeks to define disability as something that has been socially constructed rather than the deficit that the medical model implies. The Union of the Physically Impaired Against Segregation (UPIAS) first acknowledged this view in the 1970s, stating, “In our view it is society which disables physically impaired people. Disability is something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society” (Union of the Physically Impaired Against Segregation, 1976, p. 4). This union of people with disabilities was the first to actively push back against the medicalization of disability through their publication, *The Fundamental Principles of Disability* (1976). The social model instead proposes to draw the view of disability away from the individual and instead place the blame on “an excluding and oppressive social environment” (Marks, 1997, p. 88). By understanding disability through the oppressive nature of the world around, it moves blame away from the individual and shifts onto the system that disable them. This model of disability hopes to free disabled people from the bounds of their disability and instead point out the injustices that society upholds to further impair these individuals. From inaccessible buildings to technologies not designed for disabled users, the social model points to the systemic and institutionalized inequity that holds back

disabled people from fully participating in society. By freeing disabled people from the bounds of oppression by these forces, the social model hopes to shape a vision of society in which all people can equally participate in these systems, normalizing the fact that there is not truly a 'normal' human being.

2.2 Education of Disabled Students in the United States

In the United States, all students regardless of disability status are mandated to attend schooling. While the ages may vary from state to state from when they are required to attend, the requirement for education exist in all 50 states (National Center for Education Statistics, n.d.). The right to education for disabled students was not put into law until the 1970s with Section 504 of the Rehabilitation Act of 1973. This act was the culmination of countless efforts during the 1950s and 60s of disabilities activists, such as Ed Roberts and Judy Heumann (Scotch, 2009). This movement pushed to codify the right to education for all disabled students, as long as they fall under the criteria for these services. In the years proceeding this act, several more polices, such as the Individuals with Disabilities Education Act (IDEA) and the Americans with Disabilities Act (ADA) have continued to raise the bar for entitlement to education for disabled students.

In the years following these decisions, the timeline and methods of education for disabled students have drastically changed. In the current time, students with disabilities may follow different paths due to the severity of their disability. For the students in this study, most of which have mild to moderate disabilities, schooling generally starts in an inclusive classroom during their elementary years. Students who are identified as having a disability will then have a consultation about the effects of this disability and an Individualized Education Plan (IEP) will be administered for the student (deFur, 2003; Diliberto & Brewer, 2012). These plans provide a guideline for the services and tools needed in order for the student to receive a free and equal education. As the students age, general education or special education settings may be suggested in order to best fit the needs of the student. This falls in line with the Section 504's requirement for a free and appropriate public education (FAPE) for disabled students (Nondiscrimination under

Federal grants and programs, 1973). This requires all public-school districts within the United States to provide access to special education services for any child who has an IEP.

Students with an IEP who graduate out of high school are then given the choice of taking part in a transitional service, a job preparation program covered by the IDEA. These programs provide a variety of resources for the student in order to gain job and life skills prior to their transition into adulthood (Youth Transition Program, 2010). If a student elects not to take part in these specific programs, they can instead take classes at higher education institutions or can focus on developing independent life skills in a setting removed from the public and community-based program. After the completion of these programs, the goal as stated by federal and state laws is for students to be on their way to or already have acquired employment and enjoying an independent lifestyle, befitting to the needs of that student (Lindsay et al., 2019). The knowledge of disabilities education in the United States is vital to this research, as it provides a precursor to the young-adult services for disabled persons, like transition services.

2.3 United States Transition Programs: Overview of Transition Services

Transition services are provided to all eligible students with disabilities who have an Individualized Educational Plan (IEP), which addresses the desire for college and career readiness (United States Department of Education, 2017). The concept of the IEP was developed by the Individuals with Disabilities Education Act and, “refers to both a meeting that is held and a plan that is written about [a] child’s program” (Siegel, 2020, p. 15). The meetings consist of the student, teachers, transitions specialists, personal support workers (PSWs), and parents who sit and discuss the goals, abilities, and challenges for the student. These plans also cover a variety of issues and accommodations that are to be made for each student, whether they be only for in-class usage or incorporated in their daily lives. Meeting members go into an in-depth analysis of the student, how their disability impacts their schooling, and what learning environment a student will be placed in. These environments include general education, inclusion classrooms, and self-

contained classrooms (Ginger, 2006; Idol, 2006; Lohman, 2011). Each of these environments vary in the exposure a student has to general education settings. If it is determined that a student can function in these settings with modifications or accommodations, it is up to those on the IEP to determine the "least restrictive environment" for the students (United States, 2011). The concept of least restrictive environment applies to all individuals with IEPs' and all type of classroom settings. Inclusive settings take the general education curriculum and modify the lesson plans, so that the content can be absorbed by the students in these settings. These types of settings are popular within secondary settings, however, a subject in which IEPs cover are future plans for the student.

Another area discussed in IEP meetings are post-secondary outcomes. Dependent upon the ability and desires of the student, a plan could be made for the student to attend post-secondary education, community-based transition programs, or striving for employment (Neubert, Moon & Grigal, 2002). These goals are based on the hopes of the student and the opinions of what of meeting members feel is reasonable and attainable for the student (Fish, 2008). It is important for these meeting to consider the full-scope and lifestyle of the student when determining outcomes, as teachers may have a different perspective of the student versus the opinions of parents and PSWs. Working through these differing views and collaborating with one another, all parties eventually agree upon a suitable academic plan for the student that may include post-secondary education goals, independent living plans, and career aspirations (Cameto, Levine & Wagner, 2004). These plans are flexible; therefore, IEP meetings are held at multiple times throughout young adulthood to allow for growth and change in the student and their goals. As Cameto, Levine, and Wagner state, "Some of the differences, such as the role youth take in the process, may occur because of the increased maturity that comes with age" (2004, p. 3). With increased participation in these meetings, other parties must center the needs and desires of the disabled student, as it is their right to receive access to any education, career opportunity, and experiences that they wish to seek. These policies and ongoings with transition settings are necessary to this research, as it provides a

foundation for us to understand what these programs and services provide. Together, we can operate on a mutually understood definition of these programs and policies, so we can evaluate their effects later on in this research.

2.3.1 Federal Policies: How Did We Arrive Where We Are Today?

In the United States, individuals with disabilities rights to education are protected by three acts: the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA), and the Individuals with Disabilities Education Act (IDEA). These acts secure access to education that is fitting of these individuals, whether it be through special education programs or through participation in general education with modifications or accommodations (Pleet-Odle et al., 2016). These acts were established to secure the rights to education in order to best equip these students their futures. Through Individualized Educational Plans (IEPs), established by the IDEA, parents, teachers, and the students themselves work together to create an education plan that they feel will best equip them for their future. These plans are aided by the provisions that are secured by these policies. The Rehabilitation Act of 1973, specifically Section 504, "is a national law that protects qualified individuals from discrimination based on their disability" (U.S. Department of Health and Human Services, 2006, p. 1). The Americans with Disabilities Act, specifically Title II, "prohibit[s] discrimination in programs or activities that receive federal financial assistance from the department" (U.S. Department of Labor, n.d., p. 1). The Individuals with Disabilities Act, as a whole, "ensure that all children with disabilities have available to them a free, appropriate public education [FAPE] that emphasizes special education and related services designed to meet their unique needs and prepare them for further education, employment and independent living" (U.S. Department of Education, 2017, p. 1). These acts, in conjunction with one another, assure that the right to a quality education is protected for students with disabilities.

Prior to the creation of these acts, education for those with disabilities was not a protected right under federal or state laws. Acts, such as the Smith-Hughes Act of 1917, sought to create vocational education, however, they did not explicitly target disabled

learners (Friedel, 2011). Instead, this act was developed in order to provide curriculum that "(1) met the needs of students for a meaningful curriculum, (2) provided opportunity for all students to prepare for life and work, (3) helped foster a better teaching-learning process-learning by doing, and (4) introduces the idea of utility into education" (Scott & Sarkees-Wircenski, 2004, p. 151). Through the encouragement of career-centered education and skill attainment, the Smith-Hughes Act provided a foundation on which transition programs are situated upon. This act introduced federal funding for vocational educational programs, requiring states to adhere to the standards set by the nation. Acts, like the Rehabilitation Act, ADA, and IDEA, utilize federal funding in order to fund vocational programming specifically for disabled students to foster skills for gainful employment and postsecondary education (Stodden & Whelley, 2004). These policies are vital for students with disabilities, as it affirms that funding and opportunities will be available nationally, allowing for these programs to exist regardless of what state they are situated inside. As stated in a review of the effects of these policies, "America is better off because of the ADA and IDEA" (Blanck, 2019, p. 618). Without federal support, the opportunity gap for students with disabilities could potentially widen due to state policy and lack of support at the local level.

2.3.2 State Policies: What Do These Policies Look Like in a Local Context?

While federal funding and standards are present within curriculum for these programs, it is up to the states and local governments to decide how these policies will impact the education of their communities and how this education will be disseminated. In Oregon, the Department of Education, the Office of Vocational Rehabilitation Services, the University of Oregon College of Education, and individual school districts have partnered together to create a framework for transition programs across the state (Youth Transition Program, 2010). This framework prioritizes career skills and employment outcomes in accordance with federal standards, however, these educational providers also further their expectations through the individualization of curriculum and personalized support for individuals in these programs. Localizing the curriculum to fit

the needs of the students being served allows for each child to have access to "focused on post school goals and self-determination and help to coordinate school plans with relevant community agencies" (Youth Transition Program, 2010, p. 2). Work and support have been committed to these areas in order to assure that the needs and aspirations of the students are being met. This support can come in many forms, from utilization of digital aides or assistive technologies to human help in the form of personal support workers (PSW), or direct support workers, students can and do receive support both in class and in the ways in which they may desire to be supported, including their work experiences (Taylor, 2008).

The work of the PSW in support of the disabled worker is vital, just as is the access to assistive technologies to support disabled people in all aspects of their lives. Access to these tools both fall under the umbrella of the Americans with Disabilities Act, as they both provide supports for disabled workers to perform their jobs with reasonable accommodations. According to the United States Department of Labor, "a reasonable accommodation is a modification or adjustment to a job, the work environment, or the way things are usually done during the hiring process" (n.d., p. 1). These modifications can come in the form of wheelchairs, screen readers, personal support workers, any adaptation that will help the disabled counterpart integrate into spaces create for their able-bodied colleagues (Waisman-Nitzan, Gal, & Schreuer, 2021). While accommodations and modifications can be seen in physical form through these aides, they can also occur through the modification of work schedules, job demands, and increased supervision (McDowell & Fossey, 2015; Shaw, Kristman & Vézina, 2013; Head & Baker, 2005). Access to these aides, workplaces which are willing to accommodate these workers, and staff willing to supervise the work done by their peers are all require in order for disabled workers to seamlessly integrate into the environments. While these rights may be protected under federal policies and enforced at the local level, there are still many workplaces that find ways to discriminate and marginalize disabled workers (Robert & Harlan, 2006). This reality is not only true in the workforce, but it is

also symptomatic of systemic and institutionalized discrimination that exists against disabled people (Schriner, 2001; Quaye & Harper, 2014; Jones, 1996).

2.4 The Digital Divide: Abled Versus Disabled Users and How Technologies Enable Ableism

Societal values are biases are encoded into every facet of the technologies that we use on an everyday basis (Ellis, 2018; Kottorp et al., 2019; Willson, 2017). From cell phones to computers to the online banking systems we use, all are controlled and operated by some sort of technology or algorithm. The issue that exists with these machines, is that humans are necessary to the development of the codes and design of these products. At least one human will have their hands on the product during its development stage. It is at this point, that the biases held by that individual will make their way into the product, whether it be implicitly or explicitly. As Microsoft, one of the world's leading developers of technology, reports, "6.1% of employees in the US identify as a person with a disability" (Brodey, 2020, p. 1). Efforts to mitigate these issues have been made, however, an article looking at the management of bias in AI states, "Even with careful review of the algorithms and data sets, it may not be possible to delete all unwanted bias, particularly because AI systems learn from historical data, which encodes historical biases" (Roselli, Matthews & Talagala, 2019, p. 539). As these biases make their way into these products, we see the lack of presence of those with disabilities throughout the product development timeline is felt.

The presence of disabled people in the development of technology and consideration for disabled people in the development of these products has been quite limited (Vicente & López, 2010; Elmore, Meloncon & James, 2014; Krutzinna & Floridi, 2018). Ableism has been detected in algorithms, the physical designs of technology, and various aspects that shape the user's experience with these technologies (Jaeger, 2012; Idoughi et al., 2022; Dobransky & Hargittai; 2016). In another case, a study investigated a course outcomes prediction tool for teachers. This study looked at the results for those with self-identified disabilities. They found that disabled students, in comparison with

their able-bodied counterparts, did more poorly than the algorithms predicted (Riazy, Simbeck & Schreck, 2020). This due to the algorithm being created in order to predict the results of able-bodied users, not the abilities of their disabled peers. Rather, they accounted for the societal norm and forced those that exist outside of these parameters to face the consequences of insufficient data. This is one example of algorithmic bias. Algorithmic bias as a term is widely disputed, as Baker & Hawn note, "Overall a range of "biases" appear across definitions, from the statistical biases of measurement and error to imbalances in how well a model performs across groups, to systematic skew in results, to disparate impacts and discrimination as model results are interpreted and applied" (2021, p. 4). Regardless of how we define bias, whether it be through representation in statistical data or through the analysis of unfairness in systems and institutions, it reigns true that communities of marginalized users will continually be subject to these biases regardless of if they are engaging with the world through real-life or digital means. Unfortunately, these experiences are not just limited to one usage of technology but apply across the board to any digital technology.

These biases against disabled users are not only experienced within educational settings, like the example discussed earlier, but are a common theme that encapsulates the experience of disabled users' experiences (Whittaker et al., 2019; Antona & Stephanidis, 2021; Petrie & Bevan, 2009). One other example of this bias is the algorithmic bias that exists during online interviews. In a study about discrimination and hiring bias, Paquette and colleagues state, " These biases [in Natural Language Processing technologies] could have dire consequences when applied to hiring practices" (Paquette et al., 2020). These biases affect the outcome of job opportunities for disabled people, however, these biases are not just limited to this spefic use of technology. Research interests at the intersection of disability and technology often observe the creation of artificial intelligence to detect disability but does not study how these algorithms may be embedded with bias against disabled people. As noted by Baker & Hawn (2020), at least two papers exist that address algorithmic bias against disabled users in educational settings. Two papers out of the vast amount of research that is generated around technology is not enough to represent a

global community. The failure to represent not only a community that exists at the local level, but also exists as members of populations across the globe allows for the marginalization of users based on their disability status and their perceived ability to assimilate in with societal norms. These attitudes within technology further perpetuate ableist philosophies to exist at the local scale, but also as a global phenomenon. A study by Alper and Goggin stated, “technologies, especially digital ones, are essential for many people with disabilities to gain key literacies and fully participate in their societies, they remain out of reach for most” (2017, p. 727). It is important for us to understand how technologies are currently used by disabled people and how these technologies are not made for these users, as it gives a fuller understanding to the ways that ableism imbeds itself from social environments into the technologies and systems we use on a day-to-day basis.

2.4.1 Assistive Technologies: How These Technologies Conform to Societal Values

Assistive technologies are one of the most prevalent forms of technology usage form students with disabilities (Day, Jutai & Campbell, 2009). These technologies can be used in educational settings but are also used in a variety of settings and spaces. The Assistive Technology Act of 1998 defines this term as:

> (1) The term “assistive technology device” means any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.
>
> (2) The term "assistive technology service" means any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device. Such term includes:
>
> (a) the evaluation of the assistive technology needs of an individual with a disability, including a functional evaluation of the impact of the provision of appropriate assistive technology and appropriate services to the individual in the customary environment of the individual; (b) services

> consisting of purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by individuals with disabilities; (c) services consisting of selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices; (d) coordination and use of necessary therapies, interventions, or services with assistive technology devices, such as therapies, interventions, or services associated with education and rehabilitation plans and programs; (e) training or technical assistance for an individual with disabilities, or, where appropriate, the family members, guardians, advocates, or authorized representatives of such an individual; and (f) training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of individuals with disabilities (§ 3 [3-4]).

As can be gathered from this definition, assistive technologies require not only that the participant have access to these technologies, but also have the time and money to afford the necessary trainings, fittings, and services that are required to be able to utilize them. This is where transitional services and special education services are supposed to step in (Edyburn, 2004). According to Edyburn's study of special education services, however, "there is little evidence that each school district has adequately trained personnel in every school building to provide leadership on the issues associated with assistive technology use in schools" (2004, p. 18). Due to the lack of adequate training, teachers are unprepared to provide the necessary supports in order to better enable the students needing these technologies in their classrooms. In a study conducted by Judge and Simms looking at the incorporation of assistive technology training into special education teacher certification curriculum, they found, "that although the coordinators of graduate special education teacher training programs believed in the importance of the

competencies listed, they did not believe that their programs were successfully integrating those skills into their curriculum" (2009, p. 34).

The failure to have adequately prepared teachers who are prepared to equip students with the skills needed to utilize their assistive technology reinforces the medical model of disability (Hersh & Johnson, 2008; Cook & Polgar, 2014). It reinforces this model by seeing technology just as a means of impacting the disabled student. Because there is no effect on the agency of the abled-bodied students, there is no rush to solve the problems faced by disabled students. This is an unethical view to technology for disabled people, as it views technology as a means for fixing a medical issue in order to better suit the individual to a world not built for them. Cook and Polgar found, "There are cases in which ATs [assistive technologies] can actually compromise an individual's autonomy if they are not thoughtfully applied" (2014, p. 69). In the current United States education system, where educators are reporting they are not being properly trained to apply assistive technologies to their lessons, problems emerge which limit the autonomy experienced by disabled students, prioritizing the experiences of able-bodied students at the expense of their disabled peers' sake.

2.4.2 Accessible Technology: Universal Design (or The Lack Thereof)

Unlike assistive technology, which views disability as a characteristic that must accommodated to in order to fit normative standards, accessible technologies strive to create products that are inclusive of all users. From datasets that are representative of all populations to using a product with ergonomic design of digital devices, disabled users are no longer seen as a population who must adapt, but rather as another variation of the human condition that products must be suitable for in order to not only serve the majority of users of the devices, but any individual that may utilize these products at some point in their life (Chen et al., 2013; Yang et al., 2020). In education, the concept of creating an accessible curriculum for all students is known as the Universal Design for Learning (UDL) (Rose et al., 2005). This method of teaching and learning sees education as a right to all, which may seem to be a commonality with other equity centered models of

learning. The thing that sets Universal Design of Learning apart is that "the Universal Design for Learning assumes that learners' affective domain represents a crucial element to learning and that learners differ markedly in the ways in which they can be engaged or motivated to learn" (Lin & Barber, 2022, p. 114). By assuming that all learners can be engaged in a myriad of ways in order to attain standards of curriculum, the door for disabilities inclusion widens, as we allow for multiple methods of achievement to be considered in order for learning to occur. In a study of educators conducted by Lowrey et al., they found "Two of our participants provided examples that focused on technology as a constant part of UDL implementation rather than language that focused on concepts of teaching and learning" (2017, p. 237). In this example, UDL was utilized as a structure to provide a more inclusive setting for disabled learners in general education classrooms. The teachers interviewed in this study identified properties of UDL that allowed for greater inclusion into the classroom. This is where technology steps into the picture.

Scholars have argued that when technology is utilized in ways that allow for greater diversity in these settings, greater inclusion is allowed, meaning that disabled students are afforded the ability to participate in ways that are relevant to their own ability and allowing for a greater diversity in perspective for all students (Jimenez et al., 2007; Al Hazmi & Ahmad, 2018; Hitchcock & Stahl, 2003; Messinger-Willman & Marino, 2010). This diversity and freedom of agency and autonomy for disabled students can only grow when accessible technologies are used in place of what is used in everyday technology in schools. As has been discussed with the utilization of UDL, when the design of curriculum accounts for all parties who may be present in a classroom, diversity of perspective and cultural relevancy of the content increases (Kieran & Anderson, 2019). Reports looking at the usage of accessible technologies with large, diverse classes found, "that their use both improved academic productivity and enhanced student learning" (Willey & Freeman, 2006, p. 111). This study looked at large, diverse set of students and was able to find that each one was able to utilize the technology in some way that would allow for their own learning to benefit.

2.5 Employment Outcomes of Transition Programs

Transition programs in the United States are used as a form of post-secondary education that equips students with job and independent life skills necessary to foster independence in their lives (United States Department of Education, 2017). According to the IDEA, "Transition services means a coordinated set of activities for a student, designed within an outcome oriented process, which promotes movement from school to post-school activities, including post-secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living or community participation" (United States Department of Education, 2017). These programs take place after the completion of high school and are often partnered with the surrounding community in order to best serve the needs of these students. A necessary component of these services is the ability to prepare students to become employed after their completion of these programs. This can occur in many ways, whether it be through community-based internships, through in class trainings, or through virtual training provided to the students (Grigal & Dwyre, 2010; Youth Transition Program, 2010). These internships and trainings provide skills that are thought to help students on the job market after their transition program is complete. From resume building workshops to in person interview conduct, these trainings are all aimed at the goal of attaining employment. These goals align both with federal policy goals put forth in the development and federal support for transition programs, and through local policies and programs, which strive for disabilities inclusion from community partners.

2.5.1 Federally Mandated Goals

These goals discussed in the last section all align with the IDEA and Federal Transitional Service's goal of job attainment due to transitional services. In conjunction with the acts mentioned above, the Workforce Innovation and Opportunity Act codified this goal into law. The act defines competitive integrated employment as, "full-time or part-time work at minimum wage or higher, with wages and benefits similar to those

without disabilities performing the same work, and fully integrated with coworkers without disabilities" (Kamau & Timmons, 2019, p. 1). This employment is stated as a federal goal for the outcomes of children involved in transition services within the Untied States. As stated in the *Competitive Integrated Employment (CIE) Toolkit*, provided by the Nation Technical Assistance Center on Transition, "Competitive Integrated Employment (CIE), real work for real pay is the gold standard of transition outcomes for students with disabilities. The work should align with the post-school employment goals of the student and is the desired transition outcome for all students with disabilities who choose to work, regardless of disability or needed accommodations or support. CIE should be a realistic and desirable expectation for all students" (Allison et al., 2019, p. 5). Striving for and expecting equal pay for the same job as those without disabilities should be an attainable goal, as Allison et al. stated. However, this is often not the reality for many disabled workers. For many disabled workers, the benefits of working are not the same as their able-bodied counterparts (Heyman, Stokes & Siperstein, 2016). The National Disabilities Rights Center has called out these injustices, stating:

> "What we found was a system that does not provide truly meaningful employment opportunities for people with disabilities and in many instances exploits their disability for the financial gain of employers. We found a system that traps these workers in endless "training" programs that prepare them for nothing and often leaves them impoverished. Worse, federal laws and programs as well as many provider organizations within the disability service system help facilitate this travesty" (Decker, 2012, p. 3).

Through the upholding of the commitment to competitive integrated employment and the continued development of disabled students and workers, transition services aim to tackle these issues and end the circle of injustice that is continually perpetuated by these political injustices.

2.5.2 State Specific Goals of Oregon Transition Programs

According to the IDEA, “School districts must provide a coordinated set of transition service that will enable the student to achieve his or her goals, and they must work collaboratively with appropriate agencies to ensure that students have access to needed postschool services” (McDonnell & Hardman, 2009, p. xiv). In the state of Oregon, the Youth Transition Program through the University of Oregon has become the main provider for this education. Through this work, they have set out to not only provide not only to provide the federal requirements for transition programs, but to localize their work, creating relationships and connections within their local communities to create support networks for these young adults. In their 20-year report, they state, “YTP has two distinct yet interconnected goals. The first goal is to improve post school transition outcomes for youth with disabilities by preparing them for employment, postsecondary education or training, and independent living. The second goal is to increase capacity and create systems change in schools and other agencies serving students with disabilities in transition from school to work” (Youth Transition Program, 2010, p. 1). Setting out to attain these goals, Oregon’s transition programs have gone above the national standards in order to create community-based programs and networks to support the achievement of these youth. In a study conducted by The Youth Transition Program, they averaged 91% high school competition for their student, which is 19% higher than the national average (Youth Transition Program, 2010). In addition to their graduate rates, their graduated students have also been engaged, which they define as, “either working in competitive employment or enrolled in some type of postsecondary education or career-related training” (Youth Transition Program, 2010, p. 7). Of the students involved in these programs, they repost the 77% of graduates report being engaged at twelve months post-graduation (Youth Transition Program, 2010). This is a vital statistic, as it illustrates the strong support given to these young adults and the agency that they are afforded by being meaningfully employed or gaining skills for a successful transition into the workforce.

2.6 Research Gaps, Aims, and Questions

As I read through the current research surrounding the issues of disability, educational technologies, and job opportunities post-transitional services, I found that a gap exists at the intersection of these issues. When looking at each topic on their own, there is a plethora of information surrounding these issues. From disabilities rights to the digital divide, these topics are often paired with one another. For example, the utilization of disability theory when looking at the digital divide (Goggin, 2017). Or the analysis of transitional services' impact on job opportunities for their disabled participants post-training (Baer et al., 2003). However, when looking at the intersection of the three of these issues, there is a glaring gap of research the exists at this convergence. Because of this lack of information, the aim of my research was targeted at these issues.

The aim of my study was informed by my experiences as a PSW and by the lack of research that exists at the intersection of disability, education technology, and job opportunities. The aim of this research was to shed light on the attitudes and opinions of those at the heart of these policies and systems. To do so, I knew I wanted to target educators, parents, and other caregivers who are involved in the education of these students. These people witness the growth of the student from an outside perspective and can pinpoint the technologies and educational practices that directly impacted the trajectory of that students' success. To get a full understanding of the issue of disability, education, and the digital divide without exposing a sensitive group to potential trauma, I knew that I needed to conduct my research with these groups to be able to add to this research field.

The research questions that grew out of this work are: How have policies supported or undermined the effects of technology usage in the special education classroom? How has ableism impacted technology usage in the classroom and shaped the interactions with technology for students? Have community transition programs trained students with the skills, specifically digital skills, needed to succeed on the job market? With this research, I specifically wanted to target policy development and contribute to theories in disabilities education.

Chapter 3: Methodology

3.1 Overview

In this chapter, I will discuss the approach and design of my research. This will then be concluded with the limitations of this study. This section will be set out as follows: (1) the theoretical framework underpinning this research; (2) the method of sampling used to identify participants; (3) the selection criteria for participants in this study; (4) the method of data collection used; (5) the method of data analysis; (6) the ethical considerations; and (7) the limitations of this study.

3.2 Theoretical Framework- Social Justice and Capabilities Approach

The theoretical backbone of the paper is situated in both the social justice and capabilities approach, particularly taking lead from the research done by Tikly and Barrett (2011). This approach aims to center "how education quality can be understood in relation to the extent to which it fosters key capabilities that individuals, communities and society in general have reason to value" (Tikly & Barrett, 2011, p. 1). When looking at disabled students in transitional services, we must look at the capabilities, or skills, offered by these programs versus the capabilities offered to their able-bodied counterparts. Additionally, these approaches can be applied to disabled students throughout their educational experiences, as the education we receive in our youth often impacts the capabilities we are afforded in our adulthood (Saito, 2003; Biggeri & Santi, 2012). For example, if a child does not learn how to type, they may not be afforded the experience to learn to code in their future. For students with disabilities, if they are not afforded the experience of learning to read on-level books in their youth, they may not be afforded the experience of engaging in on-level readings and analysis in their secondary years. By keeping these values at the forefront of research, we can get an accurate depiction of whether or not the education being provided to, in this case, disabled learners, is tailored to the needs of this community and is culturally relevant to their community. Is the education they are receiving forcing them to conform to an able-bodied world or is it honoring their unique perspectives and their "normalcy"? As we

discuss policies, technology, and job opportunities in post-transition services, it is important for us to keep these theories in mind, as they will shape our understanding of the quality and affordances transitional services offer students.

Additionally, disabilities critical race theory (DisCrit) and intersectional theory (intersectionality) were underpinning voices that informed my initial work and thought process throughout my work. DisCrit, "is indeed a flexible and nuanced theoretical and methodological tool for exploring the intersections of race and disability, along with other social markers, across a wide range of issues" (Annamma, Ferri & Connor, 2018, p. 53). Intersectionality, on the other hand, "denote[s] the various ways in which race and gender interact to shape the multiple dimensions of Black women's employment experiences" (Crenshaw, 1991, p. 1244). While my topic may not explicitly deal with the issues of race and disability, I found the concept of intersections of political and cultural issues to be of importance to the framing of my work. Using these theories, I applied the concepts of intersections to evaluate the relationship between disability, education, and the digital divide, while using the capabilities approach to evaluate the opportunities and capabilities afforded to those participating in these programs

3.3 Research Design

For this study, I found that qualitative methods were the best fit to accomplish the goal that I set out to achieve through my research. When I began this work, I knew that I wanted to elevate the teachers' and parents' voice in regard to how they felt about the quality of education being processed through transitional services and the areas in which may have needed improvement, specifically looking at technologies. This purpose emerged during a discussion with an educator I had been working with prior to my arrival at Oxford for the upcoming year. I had been firm in my interest about disabilities rights to technology and media in education, but I was not sure what exact gap I wanted to explore. The teacher then replied about how they felt the educational media for older disabled people, specifically transition aged students was lacking. I then went on the enquirer about these issues from the parents I had been working with to see how they felt

about this topic. This discussion in conjunction with the topics we were engaging with in our Digital and Social Change courses prompted me to explore the intersection of disability, policy, and the digital divide.

3.4 Method of Sampling

To complete this study, I utilized a non-probability approach to select the individuals who were contacted for interviews and questionnaire completion. While a non-probability method may seem to be a restrictive approach due to the subjective nature of selecting participants, "it is useful especially when randomization is impossible like when the population is very large. It can be useful when the researcher has limited resources, time and workforce" (Etikan, Musa & Alkassim, 2016, p. 1). Given that the state of Oregon has over 120 Youth Transition Program partners which employ multiple staff members and serves over 1500 students with parents and PSWs, I found it beneficial to limit my observation to a limited groups of individuals who are located in my county (Youth Transition Program, 2010).

In addition to utilizing a non-probability approach, I also utilized a purposive sampling method, more specifically an expert sampling method, in order to gain insight from participants directly involved with the issues being discussed. I found this sampling method to be most beneficial, as "this sort of sampling is useful when the research is expected to take a long time before it provides conclusive results or where there is currently a lack of observational evidence" (Etikan, Musa & Alkassim, 2016, p. 3). Due to the lack of information on these topics and exploratory nature of the subject, I found that this method of sampling was most beneficial for these efforts. Because of the contacts and support I had established in the Oregon special education system; I knew that I could identify individuals who had the qualifications and expertise on the subject that could provide information on the topics being discussed. For these reasons, employing the purposive sampling method was a fitting strategy for this research.

3.5 Participant Selection Criteria

For this study, I aimed at interviewing who I knew to be experts on the subject: the teachers, parents, and personal service workers who work with these students and in these education systems on a day-to-day basis. While I thought the opportunity to interview students would be valuable, I wanted to aim this data at those who could reflect on the personal growth of the student from the time they had begun their education to their time in transitional services. Additionally, I did not want to cause any undue harm for these students when speaking of their educational experiences. A study of qualitative methods by Bashir states, "Participants lack power relative to researchers in that they have little or no control/influence over how their data are interpreted and used" (2020, p. 669). Given that disabled students have so often had their own power and agency stripped away from them, I did not want to perpetuate these same power imbalances through my own study.

To narrow the scope of the study, I focused my attention to the state of transitional services in Oregon. This state is where I spent my time as a PSW prior to my arrival at Oxford. It is where I spent a year growing through the educators and parents who allowed me to work with their children. It is these people with whom I am familiar and who I feel devoted to first focusing on with this research. Through my time as a PSW, I saw and heard the way that the state of transitional services was impacting the careers and futures of the youth involved. My selection criteria emerged from this background and led me to seeking out teachers, parents, and PSWs in the state of Oregon who are currently working with students taking part in transitional services. I specifically wanted to avoid looking at those in administrative positions for this initial work, as I wanted those whose jobs and experiences were most directly impacted by policies and societal standards to have the floor to speak.

Keeping these things in mind, my selection criteria were as follows: (1) identify as a teacher, parent, or PSW to a student (2) their student is a part of a transitional program (3) they are a resident of the state of Oregon and a member of Multnomah or Clackamas County. From these criteria, over 60 potential contributors were contacted,

but only 7 participants emerged who were willing to share their opinions and stories about their involvement in transitional services in the state of Oregon. Of these participants, 3 are educators, 3 are parents and PSWs, and 1 is strictly a PSW. They all have nearly 20 years' experience working with or having close ties with the Oregon special education system.

3.6 Method of Data Collection

Participants were contacted in June and July of 2022. For teachers, I looked at school staff lists and contacted all teachers who were involved in transition service, whether they be high school teachers who aid in the IEP process and aid in the transfer into transition programs to actual teachers in transition services. For parents, a former contact from the school district reached out to some of the parents of students involved with these transition programs. After their initial agreement to participate in the study, they were then distributed the questionnaire along with a consent form. Questionnaires were comprised of 8 open-ended questions that were to be discussed in the interviews. Participants were told to provide as much information as possible for these questions, with 3 to 4 sentences suggested per question. They were to be completed with as much information about transitional services as possible, however, participants were not asked to supply a sensitive information about their child or students, as to keep focus on the issues at a broad range and not expose any personal issues, without the consent of the child or student. These questionnaires were distributed through a digital means, which provided security for these participants, as all data was kept in a secure cloud drive provided by the university (McGuirk & O'Neill, 2016). In order to keep this data confidential, participants identifying information was removed from the documents and they were each assignment a pseudonym in order to protect their identities.

To collect data from these participants, I initially enquired about setting up times to individually interview each participant. Due to the summer break and their inability to participate in these interviews, the participants were then supplied with an open-ended questionnaire that covered the exact same topics and questions that were to be discussed

in these interviews. I decided to utilize questionnaires due to an article by Eckerdal and Hagström. In this article they state, “It also becomes evident that many respondents do not view themselves solely as providers of information but as co-workers” (Eckerdal & Hagström, 2017, p. 1). This is how I wanted my data collection to come across. Not as a formal process in which I was interrogating the subject about the issues, but rather as a form of relationship building, where the participant and myself were collaborating together to create information that is invaluable and targets the gaps that they are attesting to exist within transition services. While I initially had been worried about a lack of data or inability to follow-up questions on a physical form, the data I did receive baffled me. Not only were participants willing to share a vast amount of information about their thoughts and opinions, but the participants were also able to articulate more in-depth information about the exact issues and troubles that existed within the transition programs and the policies surrounding them. In an article by Braun et al., they state, “qualitative surveys may be more appropriate when: they are the best ‘fit’ for participants’ needs (e.g., for very sensitive topics); a population is dispersed, hard to engage or access and/or diverse; a wide range of perspectives or positionings is sought; the topic suits a ‘wide-angle lens;’ or the topic is likely adequately explored in a survey because your focus is quite specific” (2021, p. 651). I found this information to be true, as participants were more willing to disclose information that I previously would not have anticipated receiving in an interview setting. By giving the participant the ability to control what goes on a page and what information is shared, I feel that people are more willing to be honest and share the personal information that they may not feel comfortable sharing if someone else was in control and present in their space.

3.7 Method of Data Analysis

To analyze the data provided from these questionnaires, I employed the thematic analysis strategy to help categorize and find common themes and codes amongst the answers provided by my participants. *The Coding Manual for Qualitative Researchers*, states, “A coder in qualitative analysis is most often a word or short phrase that

symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2021, p. 5) Being able to assign codes and themes to sections of data provided an opportunity for me to remove myself from the research and really dig in deep into what my participants were stating. It was when I was able to take in this information and find common themes and codes amongst my participants sentiments that the story of the research begun to unfold. I also chose this method of analysis as, "It can assist beginning qualitative researchers, especially teacher-researchers and educational researchers in making active decisions on and applying their particular form of analysis to practice in their natural classroom-based research" (Xu & Zammit, 2020, p. 8). As I will be entering into the classroom as a teacher in this next stage of my career, I found thematic analysis to be a valuable tool for me to develop in myself. If I am able to take in the information from my students, removing my own bias, to be able to find themes and common codes in their feedback or sentiments, I can apply these same techniques in order to improve my own practice outside of academia.

Additionally, I also sought not to change any of the verbiage used by my participants when analyzing this data. I thought it to be important that the quotes and impressions provided to me through these questionnaires be the same as what is reported in this research. For all quotes included in the next chapter, none have been edited in any way from what was originally written by the participants in their questionnaire. While themes and codes can be vital to the analysis of an individual's work and great care can be taken to not skew data in any way, they are still subjective. While this may ring true, there are also ways to combat this subjectivity. Clarke & Braun did a report on researchers choosing to utilize thematic analysis, and state that researchers who are aware of their biases, "also have to develop an understanding of the values and assumptions of different research paradigms, as well as their own subjective positionings" (2013, p. 5). While some of my themes involved more objective terms, such as opportunities and technology, other themes, such as displeasure and hopefulness, provided opportunities in which my own subjectivity provided an obstacle. Coming to grips with my own biases that exist due to my previous experiences working in Oregon youth transition services, I

combatted them by choosing to provide whole, unedited comments from participants who are also a part of these services in order to most accurately represent their thoughts and opinions. By providing data in this way, I chose to allow the participants to speak for themselves, rather than trying to speak for them. In areas where general themes are spoken of, care has been taken to assure that the codes used for this data was true to the tones of the participants and not reflective of my own biases. This information has been reviewed several times in order to assure that the themes used to code this data were representative of what was spoken by the participants. While the data used in the in this research is presented in an objective fashion, in order to address my own place in this research as a former PSW, I have additionally left some of my own reflections in response to this data as a way to honor my own self-reflection and honor my own place in this work as a fellow disabled community member and former Oregon special education worker.

3.8 Ethical Considerations

In accordance with the University of Oxford's ethical policies, I followed the Central University research Ethics Committee's (CUREC) guidelines. I was granted approval for this study (Appendix A) through this committee and adhered to the guidelines that were provided and the application I submitted. Because of the nature of the study, dealing with human participants, security and anonymity for these participants was of the utmost importance. Given that some of these participants currently work for transitional services in the state of Oregon I did not want their likeness to be identifiable from the data submitted. To combat these issues, all data that was collected has been stored on a secure cloud provided by the university. Participant names have been removed from questionnaires and all data reported in this research will utilize pseudonyms to attribute comments to each participant. Participants gave written consent both through email and through a signed form prior to the completion of their questionnaire. Participants were given the option to remove data prior to this report through direct contact to me and my supervisor and were given the option to submit as

much data to these questionnaires as they pleased. These participants were also advised not to disclose any information personal information about the specific disabilities and status of their students or children without their consent.

In addition to formal considerations, there are also some concerns for privacy of my participants that have been taken due to the sensitive nature of the study and for consideration of the participants. All of the participants who agreed to take part in this research are actively working in the Oregon special education system. Whether it be through teaching at one of the Oregon public schools or working with a state-affiliated care provider, these participants are all parts of much larger organizations whom their opinions may not reflect. In order to create distance from these affiliations and to honor the sensitivity of this situation, in-depth information about each participant has been limited. As well, the full transcriptions of these questionnaires have been withheld given the topics and sensitive information discussed in these questionnaires. Extreme care has been taken to honor the thoughts provided by these participants, while also providing anonymity and security around the information about and provided by each of these participants.

3.9 Limitations

The inability to field a wider group of participants and the constraints of working with other individuals' schedules provided a large limitation for what I had initially set out to do with this work. Due to the summer holiday and the end of school year, potential participants often responded with out-of-office replies to the initial inquiry for interviews. Because of this factor, only teachers who were in-office were able to be contacted effectively for this study. Additionally, I also felt that there was a reluctance on the part of some potential participants to participate. Because of the nature of the questions and the critique of transitions programs, I feel that some potential participants were reluctant to participate in the case that there was some identifiable information about their stances being recorded. Had I done this study again, I may have tried to contact these participants via their personal contact information rather than by their work addresses. In addition to

limitations on teacher participants, parents who were not in contact with my initial contact for parent representation were not included in this study. In order to get a fuller sense of understand of these issues, it would be vital for following reports broaden the scope by obtaining a higher number of participants and drawing the scope of the work away from the local and state level and bringing it up to the national level. Additionally, my own experiences working within the Oregon special education system also present a limitation. Given my personal investment in this context and the opinions and biases I had formed prior to beginning on this journey, my own experiences provide a limitation to this work. While I actively tried to combat these biases through reference to existing research, there are still limits to my ability to provide a completely objective viewpoint.

Chapter 4: Findings and Discussion

4.1 Issue 1: How have policies supported or undermined the effects of technology in the special education classroom?

One theme that quickly emerged from the data collected was the lack of policy support for special education programs. While general education classroom that disabled students participated in were supplied with digital technologies to aid in their learning, it seems that special education settings were not afforded these same luxuries. One participant stated:

> "When my son was in elementary school, there was an iPad cart available to the general school classrooms; one iPad per student within the class. (They, the carts, were called COWS; Computers on Wheels). The classroom teacher could check out the cart as needed/available to his/her class. Again, there were enough Ipad's for one for each student. However, my son's 'self-contained' special education classroom was not a part of that program and never used them. We were told if we wanted an iPad for him to use at school, we would need to purchase one for him. We did not feel the need to do this because even if he brought his iPad to school, it wasn't supported or used within his Special Ed class, so it would go unused throughout the day. This continued in junior high (6th, 7th and 8th grade). I do not recall high school. However, when COVID hit, all students, special education students included, were issued a Chromebook to use for online schooling." – Participant E

Because these children were not a part of general education class, these participants felt that their child's access to educational technology was limited. This contributes to the ableism of the educational system as discussed in the ableism and the digital divide section of my literature review. Because of ableist attitudes towards children in special

education settings, these students are not provided the digital means in order to access their classrooms in a similar manner to their able-bodied counterparts.

Additionally, Participant E also expressed dissatisfaction towards the IEP meeting environment. If a parent feels that an assistive technology, such as an I-Pad may better equip their child for educational settings, should they not be provided these means? Assistive technologies are covered by the IDEA, as stated the policy section of my literature review, so if this intervention was addressed in a meeting, why was it not provided? From data received for this report from the teachers, it was not on their part that these technologies were not used, but rather on the policies and funding that did not support the extension of digital technologies into these classrooms. This is not as unique phenomena, as Thomas et al. report, "In spite of legal requirements for provision, many students are without technology supports they are entitled to receive, evidencing a lack of educational equity, reduced access to a free and appropriate public education (FAPE), more restrictive placements, and fewer opportunities for advanced learning" (Warschauer & Matuchniak, 2010 in Thomas et al., 2019, p. 297). The provision of technology is not a given due to a child having it listed on their IEP. There are avenues that have to be navigated through the state on both the parents' and teachers' side in order to receive these tools (Center for Parent Information & Resources, 2018). The IEP team has a checklist that must be completed in order to assess the need for a device. If the need is determined to not be great enough or the team does not feel the device is an appropriate fit, this hope is abandoned.

The acquisition of a device, however, is only the first part of the process. In the context of our Oregon transition program, if a child was provided assistive technologies as a part of their IEP, some participants did report that there was some acknowledgement of technology usage within their child's classroom. This exposure, however, was not as robust as the technological supports provided in general education settings. One participant stated:

> **“**I believe the exposure to technology has been less in special education classrooms. Unless a student’s IEP specifically states that technology is a needed resource and a technology specialist is assigned to assist the student, then technology can be impactful. Technology has helped my son communicate more efficiently in written form and formulate ideas with the help of word and phrase suggestions.” – Participant A

The lack of training for teachers and caregivers to use assistive technologies contributed to a lack of understanding of how to best utilize these tools. Participants felt that while the devices were available and did provide some benefits for their students, they were not well-versed enough to apply the technologies to tools outside of these initial uses. The inability to utilize technologies in multiple ways often leads to the abandonment of the technology in total. A report by Scherer, states, “Other strong influences on abandonment were consumer involvement in device selection, device performance, whether or not the device met consumer expectations for effectiveness, reliability, durability, comfort, and ease of use” (1996, p. 439). If students are unable to utilize these technologies properly and there is a lack of staff preparedness and knowledge about how to use these devices effectively, the technology strips away the agency of the student. What should have been a tool for empowerment and to give back autonomy to the student, only serves as a stark reminder of the fact that the disabled student is operating in a world that was not made for them.

One participant remarked on this fact, stating:

> “Yes, I think there has been an impact to special education classrooms but not as significant as typical classrooms.” – Participant D

Upholding separate standards, not giving access to the same technologies and curriculum are all ways in which ableism manifests itself in the education, specifically when dealing with youth in special education. Participants complained of tools being

available to general education classes that were not available to special education classes. After reading these comments by my participants, I was dumbstruck as to why these tools were not offered to special education classes. If we have the knowledge that assistive technologies, accessible technologies, and other tools all increase the autonomy and agency of disabled students, why are we furthering the divide between them and their general education counterparts by providing these tools to the group who already holds power? Why is it left up to the parent to explain their child to these tools, even if their IEP grants them the ability to access these technologies?

While the access to a technology specialist can be impactful, as stated by Participant A, if a parent does provide the tool, like Participant E stated, they will still not have access to these specialists. Why is it that students in general education classes are being taught to utilize these tools and programs, yet when it comes to a student in special education, these students are told that there is no access to these trainings? While these issues have been raised, it does seem like the COVID-19 pandemic did have some impact on access and training to utilize these devices. The pandemic in conjunction with the federal policies, specifically the IDEA, set a precedent that regardless of the pandemic's status in the world, these students would be equipped with the tools offered to their general education peers in order to access their free and appropriate public education. When asked if the introduction of the IDEA in 2004 had an impact on the quality of special education, one participant responded:

"Yes. More focus (or pressure) on the district to make sure that there is inclusion with general education." -Participant C

Pushing for the inclusion of special education students in general education classrooms is a step in the right direction, but only if we equip these students to be equally represented and included in these classrooms, as noted by these participants. Rather than focusing on modifying and accommodating these students, concepts which uphold ableist attitudes, teachers and policymakers should look how they can restructure

the classroom to make it accessible for all learners. Not only does this allow for the inclusion of disabled learners in general education classes, but it also allows for variation in level and ability of general education learners (Ferguson, 1998). If we are seeking inclusion for disabled students, educators and those in power need to be better equipped to handle the technologies being used by their students and feel that they have support for technology specialists when they do not have the training, they feel they need.

4.2 Issue 2: How has ableism impacted technology usage in the classroom and shaped the interactions with technology for students?

The lack of training and support for digital technologies in special education settings also attributes to ableism and the oppression of disabled students. Through the data collected from my participants, the themes of ableism and lack of agency emerged. Participants spoke about the ways they felt their children were limited by the special education system and transition services. When asked if they felt that technology in transition services enabled independence, one participant wrote:

> "Yes, however, I feel there needs to be more training and support offered for people with disabilities at a younger age to foster independence that will lead to more success in the job market. This includes training more people like job coaches, teachers, PSWs, family members to integrate all forms of technology into daily lives as much as possible."
> -Participant D

Just as spoken about in the previous section, the lack of support for assistive technologies and technology use in the special education classroom limits the agency of the disabled learner. By stripping away the autonomy from the individual, these systems view those with disabilities through a deficit model lens. Additionally, this also can be seen as a form of ableism. By providing services and technologies to able-bodied

learners, the power dynamic between special education student and general education learner shifts to a greater extent than prior to the introduction of technology, as remarked on by Participant E. By shifting power away from the already oppressed group, the power imbalance furthers the gap of opportunity for these two groups. According to a study about inclusion of disabled learners in general education classrooms, if teachers used "differentiating instruction, a comprehensive approach to teaching, [we would enable] the successful inclusion of all students, including the disabled, in general-education classrooms" (Broderick, Mehta-Parekh & Reid, 2005, p. 194). What stands in the way of this goal, however, is the lack of digital literacy training for disabled students. A report about general and special educator perceptions of digital literacy for disabled learners' states, "Students with disabilities often lack the skills that build the transitional bridge to access the general education curriculum and be successful in school" (Alsalem, 2016, p. 211). These points were reiterated by participants, who felt that their disabled students were not receiving the digital skills and training that were available to their able-bodied counterparts.

Not only does the withholding of digital skills from disabled students serve as a form of ableism, but participants also remarked of the ways in which their disabled students are taught to use assistive technologies also contributes to these views. Participants whose children and students use assistive technologies described the ways in which these technologies were used as a source of agency, giving access to parts of life that students previously would not have had access to. One participant stated:

> "children who use augmentative and alternative communication (AAC) are able to be more integrated into the classroom. Teachers, both special education and regular ed, feel way more comfortable using and implementing technology and are therefore more open to supporting AAC users. Other students use a variety of technology and are more accepting of AAC users as peers." -Participant B

While the ability to participate through the usage of technology is a step towards agency for the disabled student, it also serves as a way of integrating their behavior towards societal norms. Rather than accepting and being able to find different ways for the student to be able to participate, the reaction to disability is to 'correct' the behavior through external means. Participants remarked of how these technologies allowed their students to be able to enter spaces that they had previously been unable to access. Jobs that were once unthinkable were becoming possible through the usage of technology.

Rather than seeing technology as a means of regulating and conformity, the participants viewed technology as a means to assimilate into environments that once barred their students and children. In order to increase their children and students' autonomy, these participants expressed the desire to increase opportunity to gain the skills and training necessary to empower their children and students. When asked about if they felt technology supported disabled students' independence, one participant replied:

> "Yes, however, I feel there needs to be more training and support offered for people with disabilities at a younger age to foster independence that will lead to more success in the job market. This includes training more people like job coaches, teachers, PSWs, family members to integrate all forms of technology into daily lives as much as possible." –Participant D

These educators and caregivers do not want to strip away the agency of their students through the employment of technology, they just want to enable their students to be able to advocate for themselves. Unfortunately, the way that technologies are developed and how these people are being taught to used them is ableist, as noted by some participants. These are not the intentions of the participants, as one stated:

> "I think it (technology) has impacted his independence both positively and negatively. However, definitely more to the positive. The negative would be in reference to the situation in the question above. However, technology has given my

> son the ability to use his brain in ways that I never thought possible. I am constantly amazing how he can figure out how to get into a system, work a game, figure out a work around to something we put blocks up to try & remove his access. He also can work the TV remote better than any of us can. Having technology available has given him the ability to act like and participate in things that other children his age do – it gives him a connection and ability to simply be a kid doing kid things. That being said, I wish the use had been there throughout his school years – in the classrooms. He could have been using different educations programs, applications on his iPad which I firmly believe would have strengthened and expanded his knowledge. Failure to have that available to him, (but available to his general education peers) absolutely gave him a disadvantage to help him gain additional skills/knowledge. (I kept asking why his class wasn't able to use it but would receive a polite response of 'supply & demand,' 'there weren't enough to have everyone use them who would like to.' Hmmmmm….. but his special ed class NEVER was given the ability to check them out." -Participant E

These participants want their children and students to be able to operate in a world that was not built for them. To be able to do the things able-bodied children were given the opportunity to do. A quote by Dobransky & Hargittai states, "The point here is that simply providing members of disadvantaged groups with physical access to the Web will not in itself level gaps in Internet use or social inequality more generally" (2021, p. 275). We need to privilege the voices of the disabled when we design and build technologies that impact us all, as they are one of the most impacted by design that does not consider their needs. Instead of designing for the majority, we need to design for accessibility of all.

4.3 Issue 3: **Have community transition programs trained students with the skills, specifically digital skills, needed to succeed on the job market?**

As digital literacy and knowledge of technologies becomes more pertinent to secure job opportunities, the work programs and transition programs available to disabled youth need to adapt to these needs. Participants described how the current transition system does not offer these skills for students. Rather, these programs tend to focus on developing life skills that can be used to develop independence for these students, as noted by Participant F. While this aspect is vital for graduates hoping to autonomy and desire to life an independent life, the goals of transition programs, both federally and locally, is to increase the job prospects for graduates. Participants in this study acknowledged the digital demands of new jobs, stating,

> "Over the past 20 years, job skills such as emailing and using a computer to file vs physically filing have most definitely changed the job skills my clients are expected to learn and perform daily." -Participant B

> "The jobs which the CTP graduates/current participants are offered usually require some technology skill, whether that be keeping a schedule, exchanging money, managing a register, and being aware of time. As the availability of technology increases, the need to be competent with the evolving technologies is essential. The CTP curriculum is more focused on life skills, not traditional academics. "-Participant F

As these new skills are demanded from graduates, the training available to these students needs to shift with these changes in demands. While this may be an uncharted territory, there is promise that these capabilities may be a positive for those with disabilities. In a study by Yu et al., they found, "They (disabled people) take the digital opportunities to make a change. By doing so, they destabilise dominant understandings of the language

and practices of digital labour and entrepreneurship" (2018, p. 468). Disabled people who can manipulate these programs have the ability to take back power from the oppressive systems which attempt to hold them back. They have the ability to get hired in higher paying, more digitally demanding jobs, as supported by responses from participants. This left me wondering, why have transition programs not tried to introduce digital technologies into their programs prior to the pandemic? Are these tools so different to what digital devices these students use every day that they would be incapable of utilizing them in a transition or job setting?

Technology is not a new concept to these students. Many participants cited the recreational use of technologies, such as gaming systems, were often used by the children and students outside of the classroom. Participants cited various uses of technology by their students and children outside of educational settings. These students are capable of using these tools in ways that can benefit not only their education, but their ability to obtain and maintain work post-transition services. With COVID-19, it seems that the viewpoint of limiting technologies in transition services has also changed. Post-pandemic, participants also noticed a greater use of technology in-class and in the job opportunities for their students. From on-job tools to devise they can use in their everyday lives, technology for disabled transition students has finally become a norm. The promise of the potential for new, digitally demanding jobs not only excites students, but excites their parents and teachers. Participants stated:

> "She (daughter participating in transition program) has not used technology in a job, but I think it would be a great opportunity for her especially if it is a repetitive job with simple instructions. There is definitely a new found comfort with technology." - Participant D

> "Yes. Being able to use technology to navigate everyday situations is extremely important. Using a computer and internet to research bus schedules, understand job expectations, and using email to communicate is all needed to be as independent as

> possible. Available assistive technology and the ability to use it allows CTP participants to be more self sufficient and less reliant on personal assistance." - Participant F

Granting the ability for these students to be self-sufficient and to take part in jobs that may have previously been unattainable is something that excites all that are involved. Parents and teachers are hopeful that graduates can maintain employment and be competitive with their able-bodied co-workers, as supported by participants in this research. Job prospects for those involved in transitional services may not have been hopeful for many in the past (Smith et al., 2021). The deprivation of technology training, the lack of focus on job skills, and the issue of access to assistive and accessible technologies were all listed by participants as issue the hindered the success of transition students. With the emergence of digital skills training in addition to life and job attainment skills, there may be hope on the other side for these students. Competitive integrated employment may no longer just be a goal, but a standard for these students taking part in transition services in Oregon.

These territories, however, are uncharted. Little information and data have been put forth surrounding the topic of disability and digital skills training for young adults in transition programs. The COVID-19 pandemic was sighted by many participants a catalyst for change within these programs, so there is hope that new studies may emerge to provide data on these topics in order to inform transition services of how to best proceed post-pandemic. Given that we are hopefully on the back half of these trying times, it should also serve as a time to re-evaluate the systems and technologies used in these programs pre- and post- pandemic to see which skills were enhanced through the utilization of new technologies and what methods of instruction work best for these students, with the goal of achieving competitive integrated employment. One participant remarked on this uncertainty, stating:

> "I'm not sure how to answer that as we are only now entering the employment stage. I don't know yet my son has the cognitive ability to perform some of the jobs which require technology? He may – I just don't know. I think if perhaps it were a simple system, the would be able to learn, manipulate a computer/whatever technology is required. However, if it is complex, I don't think so? I wish I knew that answer – I am sure that will present itself as he ages and finds himself out in the workforce. I would like to hope employers would be open to giving opportunities to those with learning delays and be willing to purchase/support programs which would enable their employee (like my son) to be a successful, thriving, equal member of their team, business and therefore community." -Participant E

While the future may be unknown and the effects of technology usage in the classroom may be uncertain given the ableist nature of current these devices, there is a sliver of hope that these participants all across the board spoke about (Shew, 2020). The hope is that technology and potentially new ways of seeking inclusion in society can open doors for disabled people that had previously been sealed shut. Participants expressed hope for their students and children to access things that may previously have not seemed possible. In order for this to happen, this research should provide politicians, technology developers, and others in positions of power to demand that disabled people be represented in accounted for with the development of any new technology or educational provisions. As we can hear from the voices of those involved and apart of the disabled community, the society we currently live in was not built for disabled people, but we have the ability to make a change and demand that the future does not look the same as it does today.

4.4 Discussion

Through the experience of interviewing these participants, the themes expressed in my research questions were addressed with points relevant to the current literature that

exists in this limited field. While the current literature typically looks at these themes individually, this research provides an example of the multi-faceted nature of these issues. Theory, policy, and the digital divide for disabled people are all issues in their lone right, but as we can see from the data collected, these issues intersect with one another in significant ways.

4.4.1 How Theory Applies to These Findings

Utilizing both social justice theory and capabilities approach, the discussions of participants aligned were able to be grounded and evaluated in an objective framework that allowed for me to separate my own experiences with the realities and opportunities discussed by these participants (Anderson, 2010; Pogge, 2002; Terzi, 2005). Themes of opportunity and skills attained in these setting were discussed, aligning with the theoretical basis of this research: the capabilities approach and social justice theory (Tikly & Barrett, 2011; Saito 2003). The discussions surrounding issues of opportunity support the findings of these studies, illustrating how the capabilities afforded to disabled people are not equivalent to their able-bodied peers and demand a critical look in order to strive for equality in community participation for these individuals (Hammell, 2015).

Specifically looking at through the lens of the capabilities approach, participants described their desire for their students and children to be able to access experiences which had not been afforded to them prior to the usage of technologies. This desire for skills and opportunities is representative of Sen's capabilities approach, as it is addressing the want for a wider set of functioning's to allow greater independence for these disabled individuals (Sen, 1995). As Sen states, "The capability set of a person represents the alternative combinations of functioning achievements from which the person can choose one combination. It is, thus, a representation of the freedom that a person enjoys in choosing one mode of living or another" (Sen, 1995, p. 267). The data collected aligns to this theory and provides a real-world example of how increased functioning, or opportunities, allows for greater independence and autonomy to be experienced by individuals. Allowing these disabled individuals to achieve what they desire and

providing them with the supports to do these things. Capabilities were addressed by all participants in their discussion of what courses and opportunities were offered to special education programs vs. general education classes. Specifically, Participant E addressed the opportunity gap that exists between opportunities for general education and special education classroom. This opportunity gap is addressed in Sen (1995), yet these findings take this phenomenon one step further by equating these issues of opportunity to issues of social justice more in line with the work of Tikly and Berrett (2011).

Theories of social justice work in conjunction with the capabilities approach, as these theories target equity for individuals, which the capabilities approach addresses through its analysis of functioning's' (Nussbaum, 2000; Sen, 1992; Tikly & Barrett, 2011; Unterhalter, 2003). These theories were an important undercurrent, specifically from discussions by Participants A, B, and C, as they were a theme in their discourse around teacher education, the lack of training opportunities for special education teachers, and their ability to be prepared to serve the digital and technological needs of their students. Tikly and Barrett (2011) address the importance of a social justice framework when approaching these topics of teacher training and education. They describe the necessity for participation from educators and those in the schooling environment as vital to this work, as they can present an in-depth analysis of these topics due to their first-hand knowledge of these issues that are situated in their classroom context. This research is an example of this knowledge and perspective, as all participants were able to give context-specific knowledge of these issues that were representative of their realities (Tikly & Barrett, 2011). Cochran-Smith also address the importance of social justice theory in education as, "it is now assumed that teachers can – and should – teach all students as per world-class standards, serve as the linchpins in educational reforms of all kinds, and produce a well-qualified labor force to preserve the nation's position in the global economy" (2010, p. 445). The participants of this study add to this idea; however, their experiences also further illustrate how policy and other external factors limit their ability to be able to provide an equitable education for their disabled

students. This development is especially true given the increased usage of technology in both education and workspaces due to the COVID-19 pandemic.

4.4.2 Policy Links

In this research, we hear from all participants about the benefits of the IDEA and how assistive technologies have benefitted those with access. This supports the efforts of federal policies, such as the IDEA (2004) and the Rehabilitation Act (1973). We specifically heard from Participant B about the doors opened by AAC usage by disabled students and how the provision of these tools has widened access for these individuals. This assessment is supported by the current literature, as special education students have seen the benefits from assistive technology provisions due to these policies (Day & Huefner, 2003; Hager, 1999; Merbler, Hadadian & Ulman, 1999) Additionally, we have also heard criticism about the lack of provisions for those without technology on their IEPs. Participant E was vocal about their child's experiences in general education and special education, displaying the tension that exists between policies for these class settings. These criticisms are valid and addressed in the current literature. The National Council on Disability addresses the gap stating, "In an ideal climate, no person with a disability should be denied the opportunity to obtain assistive technology and transfer its inherent potential into viable, life-fulfilling endeavor" (2000, p.13). The data collected from participants was reflective of this idea and calls to question what federal and state policies can do to support the technological needs of these students. Participants call for a re-evaluation of the current policies in order to better equip students for the demands of a post-COVID education and work environment, these demands are also present in current research (Layton et al., 2021; Puli et al., 2021; Smith et al., 2021).

4.4.3 Technologies

From data provided by participants, we gain a full understanding of the usage of assistive technologies in transition services, but also throughout the educational careers of these students. The use of digital technology in educational settings and in job settings

has seen an increase in a post-pandemic world and is showing a trend to stay this way for the times to come (Malhotra, 2021; Vyas, 2022). With these developments, participants cited more technology usage by their disabled students during the COVID-19 pandemic. This point is supported by the research, with studies showing an increased use of technology for disabled student during the pandemic (Dick, Akbulut & Matta, 2020; Petretto et al., 2021). Participants also supported this research, but also further extended these ideas by citing the increased usage of technology for recreational uses. we Through this data, however, we also gain an understanding of how the technologies used in various settings are also inaccessible, as supported by current research (Russ & Hamidi, 2021; Smith, 2020). Not only are technologies used in work and education inaccessible from a usability standpoint, with children needing to us AACs to supplement their technology usage as mentioned by Participant B, but they are also inaccessible due to policy restricting what technologies disabled users have access to (Epstein et al., 2021; Smith, 2020; Toquero, 2020). As mentioned by Participant E, these technologies were inaccessible due to the different standards and perceptions of what technologies the disabled person can access. This example supports the intersectional nature of these issues, showing how issues of policy and technology overlap in order to reinforce technoableism (Shew, 2020). Not only does policy limit the access to these devices, but it also limits the capabilities and opportunities for digital skills development for disabled individuals.

4.4.4 Digital Skills

Lastly, the data provided by participants illustrates the limited digital skills training and opportunities offered to students with disabilities. Participants D, E, and F specifically mentioned the limited training available to gain these skills, but also expressed a desire for their students and children have access to these tools. Limited access to these tools and training are supported by current research (Dobransky & Hargittai, 2016; Vicente & Lópes, 2010; Yu et al., 2019). These participants noted that their children and students frequently used technology outside of school and educational

settings. This illustrates that disabled students are capable of utilizing technology, it is just an issue of accessing these technologies in order to provide the digital skills needed for these individuals. This insight is supported by Dobransky and Hargittai, with them stating, “Achieving higher rates of access is especially important given that once we account for demographic and socioeconomic background, among those online, PWD are just as likely as others to engage in most activities, and in some cases even more so” (2016, p. 27). Participants noted how their students and children were often more capable of using technologies in their own homes than they were, specifically Participant E noting their television usage. The issue of digital skills training provides another opportunity for us to note the intersectional nature of these issues, by calling to question how policy supports or hinders the access to technologies and digital skills for disabled students. Vicente and Lópes note the importance of policy for student to access these skills, stating, “affordability and accessibility are the most pressing areas for policy action in order to bridge the digital divide between people with disabilities and the rest of the population” (2010, p. 60). Overall, the themes addressed in this research can all server as individual points of interest for further consideration in this field; however, when we take a step back and look at the issues of disability and the digital divide, we see that all of these themes intersect with one another to limit the opportunities for disabled students to engage with technology in both their education and their job experiences.

Chapter 5: Conclusion

Through my time discussing and reading the data provided by my participants, I questioned the purpose of transition programs. Why is it that they utilize these technologies if they know that they are not contributing to the growth of these students? Why do politicians not listen to the voices of educators and parents when they say these things are not working? And why is it that technology developers and digital media creators continually leave out this group of people in order to tailor content to the masses? There are so many moving parts to this issue, that it almost seems impossible to pinpoint the exact place where things begin and end. But isn't that the point? The systems and institutions in the United States do not operate on an individual basis but are impacted and affected by the various others that are working at the same time. Oppression of the disabled and other marginalized communities in the United States is not just occurring in the educational sector but is present throughout these various systems Working on this paper and hearing from these voices reminded me that there is not cut-and-dry solution to these issues. Having data representative of disabled people in artificial intelligence isn't going to solve all of the bias issues that are ingrained into those products.

My hope is that this research provides a glimpse into the policy changes needed for these programs and contributes to the evolution of disability theory in education. It may be a small step in illuminating the dysfunction and oppression that is ingrained within these systems, but this research is a step forward. In order to make more advances in this area, a collective voice with those impacted by these issues, the students, needs to be given the spotlight. With this collective voice, the injustices of technology, the United States education system, and the medicalization of these people needs to be called out. If we want to move forward as a group of people, we need to honor the humanity and autonomy of all of those who are a human being. How this will look in the future in unknown, but it is up to us to change the now in order to bring on the potential for a better future for our disabled counterparts. This is a commitment I will make as a teacher, and I hope to inspire others to do the same as well.

The United States' lack of policy regarding issues of access, the ableism present within current technologies, and the lack of technology-based curriculum to increase job opportunities for disabled young adults in transition all plague the United States', specifically the state of Oregon's, current transition program system. Through the data provided by my participants, I view into the ongoings of these programs was provided in order to shed light on these issues. This data is of importance, as it highlights the voices of those most directly impacted by the lack of focus from academics and politicians, without the potential for harm by interviewing a sensitive group, disabled students, who continually have their power striped away. From a lack of digital skills training for teachers and other staff to those in power depriving disabled students of beneficial technologies, these topics have been addressed in the hope of pushing other researchers to close the gap the exists at the intersection of disability, the digital divide, and post-transition job opportunities.

Utilizing social justice and the capabilities approach, I hoped to highlight the way that the current system deprives students of the capabilities afforded to their able-bodied counterparts. Through the lens of inclusion and combatting the marginalization of disabled students, I laid out a path in which the response to these issues can begin. By focusing on issues of access and political support of technology introduction to these classrooms, these theories played a part in my suggestions for ways to move forward with these issues. Utilizing qualitative methods for this study allowed for the voices and emotions of my participants to shine through. Rather than taking a quantitative stance with this first exploration into the intersection, I felt that qualitative methods were a better fit, as "qualitative analysis depends from the beginning on astute pattern recognition" (Patton, 1999, p. 1191). Given that I planned to use thematic analysis for this research, the use of qualitative methods emerged as the clear winner.

My hope for the future of this topic is for other researchers and disabilities activists to create a collective response to the issues addressed. With this response, the voices of the disabled student who are the heart of this research have to have the forefront. Through participatory approaches, researchers and activist need to give back

the power to this group of people. This research could further explore this intersection by looking at these issues at a national scale or in a higher populous state. It could also be taken a step further into DisCrit by looking at the impact of race in conjunction with these issues. Additionally, future research could employ digital skills training to a transition program and look at the effects of this education on the outcomes of the students taking part. There is much room for exploration in this topic, sop my ultimate goal would be to spark community engagement with these issues, as technology does not seem to be leaving these environments anytime soon.

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Appendix A: CUREC Approval

8/10/22, 4:15 PM [redacted]

CUREC Ref CIA-22TT-096

Hamish Chalmers <hamish.chalmers@education.ox.ac.uk>
Wed 5/18/2022 10:55 AM

[redacted]
<student.curec@education.ox.ac.uk>

Dear [redacted]

Title: Disabilities and the Digital Divide: Educator's perspectives of technology and media usage in transition services

Ref: CIA-22TT-096

The above application has been considered on behalf of the Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for ethics approval of all research involving human participants.

I am pleased to inform you that, on the basis of the information provided to DREC, the proposed research has been judged as meeting appropriate ethical standards, and accordingly, approval has been granted.

I note that you have not included information about how you will manage the audio data from your interviews. Therefore, the above approval is contingent on you using a password protected recording device. If this is a smart phone, cloud syncing to anything other than the University's OneDrive should be disabled, and audio data securely and permanently destroyed once it has been transcribed.

If your research involves participants whose ability to give free and informed consent is in question (this includes those under 18 and vulnerable adults), then it is advisable to read the following NSPCC professional reporting requirements for cases of suspected abuse http://www.nspcc.org.uk/globalassets/documents/information-service/factsheet-child-abuse-reporting-requirements-professionals.pdf

Should there be any subsequent changes to the project which raise ethical issues not covered in the original application you should submit details to research.office@education.ox.ac.uk for consideration.

Good luck with your research study.

Best wishes

Hamish Chalmers
Member of the DREC

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Recent publications:
Jitpaisarnwattana, N. & **Chalmers**, H. (2022). Can I MOOC to Catch up? The Effects of Using an LMOOC as a Remedial Tool for EFL Students in Thailand. English Language Teaching, 15(1), 37-52. doi: 10.5539/elt.v15n1p37.
Chalmers, H. & Murphy, V. (2022). Multilingual Learners, linguistic pluralism and implications for education and research. In Macaro, E., & Woore, R. (Eds.) Debates in Second Language Education. Abingdon: Routledge.

Appendix B: Participant Recruitment E-mail

Recruitment E-mail for Participants

Dear_____,

My name is [redacted] and I am a current Master's student at the University of Oxford in Oxford, England, where I am studying Education (Digital and Social Change). When I am not studying in England, my family and I live in [redacted]. It is also where I have previously worked as a PSW for a few of the students that have participated in the Community Transition Program. I am reaching out to you, as I am writing my master's dissertation about transition programs in Oregon and how educational technology/media impact these services and the outcomes of students. If you have any questions or are interested in participating, please reach out to me and I will respond as soon as possible!

Best wishes,

[redacted]
Department of Education
15 Norham Gardens, Oxford OX2 6PY
[redacted]

Appendix C: Participant Information Sheet

Oxford Deparment of Education
15 Norham Gardens, Oxford OX2 6PY
[redacted]

Disabilities and the Digital Divide: Educator's perspectives of technology and media usage in transition services

PARTICIPANT INFORMATION SHEET

Central University Research Ethics Committee Approval Reference: CIA-22TT-096

1. **Introductory paragraph**

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

2. **Why is this research being conducted?**

The aim of this research is gather opinions from those involved in transition services, in the state of Oregon, about the use of technology and media in the classroom. Additionally, I hope to look at the impact of technology in this setting and how if impacts career development plans, in a broad sense, for those in taking part in these services.

3. **Why have I been invited to take part?**

You have been invited to take part in this research due to your involvement within transition services or on the assistive technologies side.

4. **Do I have to take part?**

No. It is up to you to decide whether or not to take part. You can withdraw yourself from the study, without giving a reason, by advising me/ us of this decision. The deadline by which to decline is July 20th, 2022. At that point, any data that has been collected can be used for this study.

5. **What will happen to me if I take part in the research?**

Open-ended questionnaires will be distributed to all participants. With your written consent, these questions will cover topics pertaining to your individual experiences. As well, your answers to these questionnaires will be anonymized in the final report.

6. **What are the possible disadvantages and risks in taking part?**

While this data will be anonymized, it is up to you whether you feel comfortable participating in this research. Topics you may have a critical response about will be brought up.

7. **Are there any benefits in taking part?**

While there are no immediate benefits to the participant for this study, this research could potentially inform policymakers and academics to focus on the issues that you address in these interviews.

8. **What information will be collected and why is the collection of this information relevant for achieving the research objectives?**

Data collected include: consent forms, recorded interviews, transcripts of these interviews, and questionnaires with responses.

Identifiable data (including consent forms) will be stored in a secure cloud service, protected by the University of Oxford. This data will be kept until the end of this project. Other research data will be stored for 3 years after publication or public release of the work of the research.

The researcher and the supervisor will have access to the research data.

9. **Will the research be published? Could I be identified from any publications or other research outputs?**

The findings from the research will be written up in a dissertation. Participants will not be identifiable from the information in this dissertation.

I would like your permission to use direct quotations but without identifying you in any research outputs.

A copy of my thesis/ dissertation will be deposited both in print and online in the Oxford University Research Archive where it will be publicly available to facilitate its use in future research.

10. **Data Protection**

The University of Oxford is the data controller with respect to your personal data, and as such will determine how your personal data is used in the study. The University will process your personal data for the purpose of the research outlined above. Research is a task that is performed in the public interest. Further information about your rights with respect to your personal data is available at https://compliance.admin.ox.ac.uk/individual-rights.

11. **Who has reviewed this study?**

This study has received ethics approval from a subcommittee of the University of Oxford Central University Research Ethics Committee. (Ethics reference: CIA-22TT-096**)**.

12. **Who do I contact if I have a concern about the research or I wish to complain?**

If you have a concern about any aspect of this study, please contact [redacted] or [redacted] and we will do our best to answer your query. We will acknowledge your concern within 10 working days and give you an indication of how it will be dealt with. If you remain unhappy or wish to make a formal complaint, please contact the Chair of the Research Ethics Committee at the University of Oxford who will seek to resolve the matter as soon as possible:

The Chair, Social Sciences & Humanities Interdivisional Research Ethics Committee;
Email: ethics@socsci.ox.ac.uk; Address: Research Services, University of Oxford, Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB

13. Further Information and Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

[redacted]

Appendix D: Participant Questionnaire

Questions

Please answer all questions to the best of your ability. These answers will be anonymized, so answer as honestly as possible.

- How long have you been involved with special education (ex: working in special education services, teaching, years your child has been in school)?

- (If prior to 2004) Do you feel that the improvements to the IDEA changed your experiences?

- With the introduction of technology into the general education classroom, do you feel that special education classrooms have seen this impact as well? How has your child/the child your work withs learning (formal or informal) been impacted by technology usage?

- Has your child/the child you work with taken or been offered the option to take digital skills courses?

- Does your child use technology outside of school settings? If so, how do they use technology and what kind of experiences do they have with these technologies? (Can talk about things like video games, online activities, etc.; can address if they have the ability to talk/play against others through these mediums during their usage)

Appendix E: Participant Consent Form

Oxford Deparment of Education
15 Norham Gardens, Oxford OX2 6PY





Consent to take part in Disabilities and the Digital Divide

Central University Research Ethics Committee (CUREC) approval reference: CIA-22TT-096

Purpose of Study: To illuminate the opinions of educators and administrators working with transition services and technology in the Oregon school system.

	Please initial each box if you agree with the statement
I confirm that I have read and understand the information sheet or the above research. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
I understand that my participation is voluntary and that I am free to withdraw at any point until **20/07/22**, without giving any reason.	☐
I understand who will have access to personal data provided, how the data will be stored and what will happen to the data at the end of the project.	☐
I understand that I will not be identifiable from any publications or reports.	☐
I consent to being audio recorded.	☐
I understand how audio recordings will be used in research outputs.	☐
Use of quotations: Please indicate your preference (select *one* option): a) I do not wish to be quoted. **or** b) I agree to the use of quotations in research outputs if I am not identifiable.	☐ ☐
I give permission for you to contact me again to clarify information.	☐
I understand how to raise a concern or make a complaint.	☐

Template written consent form, version 4.1, January 2022