

IMPLICATIONS FOR PROVIDING ACCESS TO DRIVER'S EDUCATION FOR
DISABLED STUDENTS: RESULTS OF RELATED HEALTH ASSESSMENTS

by

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Date February 13, 2019

Submitted in partial fulfillment of the
requirements for the Degree of Doctor of Education in
Teachers College, Columbia University

2019

ABSTRACT

IMPLICATIONS FOR PROVIDING ACCESS TO DRIVER'S EDUCATION FOR DISABLED STUDENTS: RESULTS OF RELATED HEALTH ASSESSMENTS

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Increasing the independence of students with disabilities involves an in-depth assessment of their inclusion in driver's education. This study addresses (a) the plight of disabled students within the state of New Jersey who are unable to access driver's education, despite the provisions of the Americans with Disabilities Act; (b) the need to evaluate the potential role of health educators in conducting individualized health assessments to determine the readiness, motivation, and self-efficacy of students with disabilities to participate in driver's education; (c) the perceived benefits and barriers to the participation of students with disabilities in driver's education including the need for individually tailored accommodations; and (d) whether the goal of driving is appropriate and accessible for students with disabilities. A case-study approach was used in this research to evaluate the innovative practice of school health educators conducting individualized health assessments of current students and some graduates of the study-site university. The school implemented the described innovation during the academic years of 2007-08 and 2008-09. This research was also designed with a mixed-method

approach including quantitative data limited to frequencies and percentages and qualitative data collected from student interviews. The findings indicate that the ability of students with disabilities to drive is beneficial to their quality of life. Driving significantly impacts the self-esteem, independence, and personal freedom of this population, as well as their overall freedom to travel.

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ACKNOWLEDGMENTS

My deepest, loving, and sincere thanks are expressed to my family. My husband, Harry, not only helps and inspires me through all other facets of life, but also supported me in many of the same ways through this academic goal. I cannot begin to describe how life has changed with his love, kindness, genuine compassion, and affection instilled in our partnership. My cousin, Dr. Anthony “Tony” Garvin, is like a brother to me, and I am so thankful for his ongoing encouragement toward the completion of this life milestone. You have, and will always be, my role model and close collaborator. My late mother, Julia Bell Parker, provided the strongest of guidance throughout my life along with her unconditional love. Sincere thanks to close friends and colleagues especially, Dr. Edwin Arenas. He has continued to provide guidance, discussions, and positive reinforcement to the end. I will always keep you in my thoughts and heart. To my family, as well as my extended family members, thank you for your support and enthusiasm.

My professors have assisted me through times of tribulation, grief, and other challenging life events, and my editor patiently and diligently supported me through to the end—finally, we did it!! The hard work, the late-night reports, and missed family events—it has all come to fruition in support of a population in need of an advocate willing to forego for their benefit.

T.G.

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Chapter I

INTRODUCTION

Overview

Policy on the inclusion of students with disabilities in regular educational environments is a movement toward their full participation in the life and activities of the school. Although inclusion represents a major focus of the Individuals With Disabilities Education Act (IDEA) of 1997, students with disabilities are not always fully included in the mainstream educational experience. Social and educational integration of students with disabilities means more than simply physical inclusion in regular-education environments and extends beyond instruction in core subject areas. What actually occurs in these environments is the more important issue.

A major adolescent milestone is reaching 16 years of age and gaining the right to obtain a driver's license (Considine, 2015). However, for those with disabilities, the vehicle adaptations needed to "get behind the wheel," following that initial decision as to whether to drive at all, can be quite complex. Far fewer students with disabilities, compared to their nondisabled peers, are able to obtain a license (Vogtle, Kern, & McCauley, 2000). The findings of the 2000 decennial census indicated that approximately 49.5 million (19%) of all noninstitutionalized U.S. residents aged 5 years or older live with a disability (National Center for Health Statistics, 2002). Disability prevalence among children under 5 years of age is approximately 3%. The Americans With Disabilities Act (ADA) of 1990 prohibits discrimination against those with

disabilities including within areas of transportation; employment; and public accommodation, communication, and government activities. The Act protects drivers with disabilities in several ways. For instance, state offices of motor vehicles are prohibited from denying individual licenses to drive solely due to applicant disability.

The ability to drive can have a significant impact on self-esteem, motivation, occupation, and overall quality of life. However, historically, for students with disabilities, consideration was not given for driving programs within secondary schools (McGill & Vogtle, 2001). Such exclusion forces this student population to seek alternative driving programs, which are expensive and often difficult to access. Ociepka, Banaś, Herbuś, and Kost (2014) opined that those with disabilities who desire active social lives must be mobile. In fact, mobility is pivotal for a variety of pursuits. The U.S. employment rate for individuals with disabilities who are between 21 and 64 years of age is 33.4% compared to 75.6% for those without disabilities within the same age-group, rendering a gap of 42.2% (Erickson, Lee, & Von Schrader, 2013). The *Disability Statistics Online Resource for U.S.* (2014) indicated that an estimated 21.6% (i.e., plus or minus 0.24 percentage points) of noninstitutionalized individuals aged between 21 and 64 years and living within the United States with a disability were employed full time/full year.

The physical challenges related to disability are often the easiest to address.

According to Considine (2015),

A disabled individual may have a vehicle fitted to have adaptive equipment such as, knobs, buttons, and or [stet] pedals, to make it physically possible to drive. But the largest obstacle for people with disabilities is often the visual processing aspect of driving. Many drivers with disabilities may not recognize where they are in space relative to other objects, and the ocular motor skills used

to scan and react may be slower or less accurate, so it takes them longer to process their environment. (p. 17)

Considine also addressed how drivers with disabilities must consider the skills needed to operate a motor vehicle in the following excerpt:

Provided that [they] consider the complex sequence of steps needed to stop a car at a stop sign some of these young adults have to stop and think: Where do I put my foot? Where do I need to look? How do I signal my stop? When do I need to check the mirror? These are the same steps any new driver must consider, organize, and carry out, but for drivers with disabilities, sequenc[ing] and processing speed can present a problem. These skills may be learned and strengthened over time, but some people simply will not be able to develop the ability to safely drive a car on their own. Furthermore, those with invisible disabilities can get pushed through generic driver education programs. They might even get a license, but once they get on the road, they feel anxious and unprepared. (p. 17)

Another issue related to distraction is failure to identify important variables within the environment. While all drivers—both new and experienced—can get distracted, it is a particular problem for drivers who are disabled. Ferek (2014) incorporated bicycles into driver's education to mobilize students while challenging their minds with complex driving scenarios. She stated,

Many students do not like to run, so by using bicycles it could challenge them physically while integrating the required driver's education curriculum. With the two-wheeled machine it will provide teenagers the confidence and knowledge base they need before they start driving a complex machine with four wheels. (p. 17)

Decision making and problem solving are crucial skills for drivers, and it is important to assess these student abilities, incorporating the information provided in the formal driver's-education course materials. Ferek (2014) exemplified riding mountain bikes as supplemental to the lecture phase of driver's education and creating a "hands-on," kinesthetic learning environment. She explained,

Integrating driver's education concepts (e.g., right-of-way, yielding, merging, turning, signaling, changing lanes, recognizing pavement markings, and emergency braking) challenges students physically and mentally. Conversely, sitting behind a desk does not require a student to demonstrate safe driving principles such as maintaining the proper four-second following distance from the vehicle in front of you and how to react to wet roadway conditions. Furthermore, if obtaining bicycles or having the space to use them is problematic, then consider using scooters, or setting up driving courses and having the students walk or jog through the courses in order to learn various traffic patterns. Creating a unique driving course each day allows students to navigate the course and demonstrate understanding of the concepts they must master before getting behind the wheel of a car. (p. 17)

According to Ferek (2014), students with

disabilities including autism, traumatic brain injury, Down syndrome, multiple disabilities (MDs), and intellectual disabilities will never drive a car, but a bicycle can be a legitimate form of transportation for many of them if they are taught the rules of the road. (p. 17)

More specifically, Ferek explained,

Setting up driving courses on the tennis courts [permitted learning] how to signal, turn, and follow traffic patterns on the roadway similar to the procedures used with the other [nondisabled] students. . . . Students with balance difficulties ride adult Rifton bicycles (three-wheel tricycles that allow the torso, waist, and feet to be strapped in with Velcro supports) and more advanced students ride in the grass and navigate fields with signs, such as stop and yield signs. Additionally, setting up traffic circles and teaching students how to properly scan before entering the intersection and making these minor modifications would [give these students the same] opportunities as other students in the general physical education classes. (p. 17)

Ferek also noted,

Traffic crashes are the number one [*sic*] killer of teenagers, and physical education programs can play an important role in helping prevent teen driving accidents. Getting bikes into schools opens up so many doors for community-school partnerships, fighting the sedentary lifestyle that is running rampant in our culture, and challenging the teen brain to problem solve in new ways. Parents are grateful for the practice we are giving teenagers before they start driving the family car, community members see the importance of educating our youth, and teenagers are future parents who will raise families in our community and who will teach their children how to be safe, healthy, and active learners. (p. 20)

Barriers Encountered by the Disabled

Students with disabilities may encounter many barriers hindering their mobility and forcing them to depend upon others for transportation. Attempting to adhere to requirements of the Americans With Disabilities (ADA) Act of 1990, public-transportation systems are working to implement related changes to roads, public facilities, and vehicles. The Bureau of Transportation Statistics (BTS, 2002) suggested that “almost any activity that people engage in outside the home – working, managing personal business, socializing – relies on access to transportation of some kind” (p. 1). The Bureau reported that 3.5 million people across this country never leave their homes, which represents a national homebound population of over 1%. More than one half of this homebound group, or 1.9 million, are individuals with disabilities. Approximately 528,000 people with disabilities who never leave home experience transportation difficulties. According to the BTS (2002),

The majority of people with disabilities (62 percent) and those without disabilities (88 percent) leave the home five to seven days a week. People with disabilities who never leave home tend to be older (average age 66) and have more severe disabilities (58 percent report their disability as severe) than the disabled who leave home at least one day per week (average age 50, and 22 percent reporting severe disabilities). More people with disabilities who never leave home need specialized assistance or equipment to travel outside the home (57 percent) than do those who leave home at least once a week (22 percent). And people with disabilities who never leave home also have more difficulty getting transportation (29 percent) than those who leave home once a week or more (11 percent). Of those people with disabilities who leave the home the most – five to seven days per week – 14 percent need assistance to travel outside the home, and 8 percent have problems getting the transportation they need. (pp. 4–5)

The BTS (2002) reported that approximately 23% of individuals with disabilities need some form of specialized assistance or equipment to travel outside the home, stating,

“the most frequently cited types of assistance needed are

- cane, crutches, or walker – 48%
- assistance from another person while outside the home – 33%
- manual wheelchair – 22%
- assistance from another person while inside the home – 16%
- electric scooter or wheelchair – 10%
- oxygen – 8% (p. 5)

[Of] those with disabilities, 12% have difficulty obtaining the transportation they need, compared to 3% of individuals without disabilities. Related problems most frequently cited by those with disabilities are

- no or limited public transportation – 33%)
- don't have a car – 26%
- disability makes transportation hard to use – 17%
- no one to depend on – 12% (p. 5)

According to the BTS (2002),

About 62 percent of people with disabilities who are 15 years or older, drove motor vehicles in the month prior to the interview for local travel – to work, shopping, doctor and other medical appointments, and for other purposes. Seventy-seven percent of those with disabilities rode in a personal motor vehicle as a passenger for local travel. Forty-seven percent of people with disabilities walked (which, in this survey, includes use of a non-motorized wheelchair or scooter) for local travel during the month prior to the interview. The riders of bicycles or other pedal cycles were 18 percent of disabled persons. The disabled persons used carpools or vanpools/group cars or vans (11 percent), school buses (5 percent), and subway/light rail/commuter trains (6 percent) for local travel. Of those transportation means typically provided to assist people with disabilities, only 6 percent used motorized personal transportation, such as electric wheelchairs, scooters or golf carts; 6 percent used paratransit vans or buses sponsored by the public transit authority; and 3 percent used specialized transportation services provided by human services agencies. (pp. 5–6)

Although both disabled and nondisabled workers most often use personal motor vehicles to commute to paid or volunteer work, more workers with disabilities ride as passengers (15%) than do nondisabled workers (6%), while more nondisabled individuals drive (85%) than do disabled individuals (66%).

Driving Difficulties Encountered by the Disabled

Olmsted-Hickey (2014) reported that, when a medical condition limits visual, physical, sensory, and/or cognitive function, as it relates to the task of driving, the instruction of a Certified Driver Rehabilitation Specialist is required to achieve optimal outcomes and successful, independent drivers. More specifically, Considine (2015) indicated,

[A] Certified Driver Rehabilitation Specialist has specific training, experience, and understanding when it comes to both physical and “invisible” special needs, such as learning disabilities, dyslexia, and high-functioning autism. . . . Some Certified Driver Rehabilitation Specialist professionals also hold other credentials, such as Occupational Therapist or Physical Therapist. Driver rehabilitation specialists perform comprehensive evaluations to identify appropriate adaptive equipment and suggested a complete evaluation which includes vision screening and, in general, assesses the following: Muscle strength, flexibility, and range of motion, coordination and reaction time, judgment and decision-making abilities and ability to drive with adaptive equipment. (p. 18)

After collecting driving and personal histories, a Certified Driver Rehabilitation Specialist will evaluate physical skills and behind-the-wheel abilities including vision, perception, thinking, motor function, and reaction time (Olmsted-Hickey, 2014). Following this initial evaluation, the specialist subsequently evaluates behind-the-wheel driving skills including maneuvering, residential and highway driving, and driving in moderate to high traffic. Specialist recommendations may include the use of adaptive equipment, the need for behind-the-wheel training, or discussion of “alternative transportation options” with respective students and their families (p. 1).

Simeonsson, Carlson, Huntington, McMillen, and Brent (2001) reported on the participation of students with disabilities in school life, identifying underlying factors and examining sources of participation variability. In their research,

school activities [were] enacted to promote the independence and social participation of students with disabilities [while] examining the nature and extent of participation in schools by students with disabilities in the context of the physical, social and psychological features of the school environment, to identify underlying factors, and to examine sources of variability in participation. (pp. 49, 50)

Simeonsson et al. (2001) advanced that, given the paucity of specific information regarding how environmental factors affect outcomes for children with disabilities, the relationships among disability, environment, and participation in school activities represent an area of specific importance. When participation in school activities is the outcome of interest, the environment is the school itself. Student ability to participate in that environment can then be viewed as a function of their abilities coupled with characteristics of the school environment (p. 50).

Simeonsson et al. (2001) aimed to operationalize the concept of school participation and test the utility of measures assessing the participation of students with disabilities (p. 51). The following three specific research questions were created to support this research endeavor:

1. What are the characteristics of students with disabilities and their school environments?
2. What are the dimensions of school participation of students with disabilities?
3. To what extent does school participation vary as a function of characteristics of students and school environments? (p. 5)

Simeonsson et al. (2001) found that

the majority of respondents reported the setting in which they worked was a public school (88%), serving 150-750 students (65%), in a school district with less than 10000 students (67%). Schools offered a large number of services and supports to students in special education. Examples of those offered by at least 50% of the schools include speech/language pathology (98%), occupational therapy (77%), school psychology (76%), physical therapy (73%), transition services (55%), assistive technology (53%), and social work (52%). . . . When

asked how accessible activities were to students with disabilities, most respondents (82%) reported these students had access to all school activities. When asked how physically accessible the school buildings were to students with disabilities, most respondents (78%) replied [that] students had access to all parts of the school. The most common barriers cited [involved] cases where students did not have full access to activities or buildings. . . . The most common educational supports provided to the students were inclusive (56%) and self-contained (54%) classrooms, and classroom aides (49%). Among the services provided were speech-language therapy (53%), followed by transition services (33%), school psychology (27%), and occupational therapy (25%). Teachers reported 34% of the students used assistive technology, with the most common types being learning aids (56%) and communication aids (25%). (p. 54)

Of the total Simeonsson et al. sample of students with disabilities, 37.1% ($n = 438$) reported that driver's education was not offered. This finding is important in light of the observation documented by Booth and Samdal (1997) that schools represent "microcosms of the larger community, providing opportunities for children to develop and practice the skills necessary to support a healthy lifestyle" (p. 365).

Statement of the Problem and Purpose of the Study

Vogtle et al. (2000) investigated social satisfaction among adolescents with and without disabilities and found that 88% of teens without disabilities had obtained their licenses compared to 46% of students with disabilities. According to Considine (2015),

States set their own rules for granting licenses to drivers with disabilities, but any driver who can pass the necessary exams with reasonable accommodation is eligible to receive a driver's license. If seeking an accommodation, the driver must disclose his or her disability at the time of application. Depending on the nature of the disability, a state may be entitled to issue a restricted license. State DMV offices also can issue specialty permits and license plates that grant preferred parking. (p. 19)

The problem addressed by this current study involves (a) the plight of disabled students within the state of New Jersey who are not able to access driver's education when this program is standard for 10th-grade students, despite the provisions of the ADA

of 1990; (b) the need to evaluate the potential role of health educators in conducting individualized health assessments to determine the readiness, motivation, and self-efficacy of students with disabilities in terms of participating in driver's education; (c) determining the benefits and barriers perceived by disabled students of participation in driver's education including the need for individually tailored accommodations; and (d) determining whether the goal of driving emerges as appropriate and accessible for these students. While prior studies have indicated the importance of driving to individuals with disabilities, very few have addressed the issue of access to driver's education within the public school system for this population of adolescents.

The need for studies exploring driving and driver education for students with differing disabilities is pivotal to address. In order to fully prepare students for the transition to work and independent living, schools must address the transportation needs of students with disabilities. The purpose of this current study was to evaluate the role adjustment of school health educators conducting individualized health assessments to determine the readiness, motivation, and self-efficacy of students with disabilities in terms of participating in driver's education, as well as the perceived benefits and barriers. The research determined the need for individually tailored accommodations and whether the goal of driving for this student population is appropriate and accessible.

Research Questions

The following research questions guided this study:

1. What are the perceptions of students with disabilities regarding the potential

role of driving in the improvement of their overall well-being and quality of life?

2. How do disabled students perceive the opportunity to participate in driver's education to obtain their driver's permit?
3. How do disabled students perceive their readiness, motivation, and self-efficacy to participate in driver's education?
4. How do disabled students perceive the benefits and barriers involved in driver's-education participation?
5. How do disabled participants perceive the need for individually tailored accommodations?
6. Do disabled students perceive the goal of driving as appropriate and accessible?
7. What are the implications and recommendations within school, local/state, and national policy with regard to students with disabilities learning to drive?

Definition of Terms

The following terms have been used throughout this research and are defined for purposes of this study:

Activity limitation is a difficulty encountered by an individual while executing a task or action.

Cognitive impairment, according to Every Day Health (2014), manifests as problems related to perceiving, thinking, or remembering. For example, strokes are a common cause of cognitive impairment; other causes include head injuries and some

chronic diseases such as sickle cell or multiple sclerosis. Cognitive impairment can cause difficulties with memory, especially short-term memory, problem solving, and attention span, particularly while attempting mental tasks. Mild cognitive impairment is the medical term for age-related memory loss that has not progressed to Alzheimer's. However, such impairment is more serious than typical aging responses. The lifetime chance of developing cognitive impairment is 68% when currently 65 years of age or older. Although individuals with mild cognitive impairment can carry on conversations and solve problems, they will often forget such discussion.

Disabilities, according to the World Health Organization (2012), are impairments that can be physical, cognitive, mental, sensory, emotional, developmental, or a combination of these types, resulting in restrictions on the ability of respective individuals to participate in routine tasks of life. They can manifest as sensory, physical, or cognitive in nature and introduce developmental disabilities. A disability can be present from birth or emerge later in life. *Disabilities* is an overarching term covering impairments, activity limitations, and participation restrictions. It is a complex phenomenon, reflecting an interaction between bodily and societal features.

Impairment is a restrictive problem sourced in body function or structure.

Multiple disabilities (MDs), or *multiply disabilities*, according to Knoblauch (1998), are defined as a combination of impairments (e.g., mental retardation-blindness or mental retardation-physical disabilities) that cause such severe educational problems that afflicted children cannot be accommodated within a special-education program designed solely for one of the impairments. The term *MD* does not include deafness or blindness. Several combinations of impairment can apply; however, the student would

still be classified as MD. Cognitive, movement, and sensory are types of disabilities that can affect learning and functioning.

Orthopedic impairment (OI), or musculoskeletal disorders (MSDs), are injuries or pain in body joints; ligaments; muscles; nerves; tendons; or structures that support the limbs, neck, and back. They are degenerative diseases and inflammatory conditions causing pain and impairment during normal activities (Côté et al., 2013). They can affect many different parts of the body including the upper and lower back, neck, shoulders, and extremities (i.e., the arms, legs, feet, and hands; Kuorinka et al., 1987). MSDs can manifest from sudden exertion (e.g., lifting a heavy object) or repetitious motion; repetitive strain; or repeated exposure to force, vibration, or awkward posture (Centers for Disease Control and Prevention, 2014). Examples of specific MSDs are carpal-tunnel syndrome, epicondylitis, and tendinitis (Barbe et al., 2013). Abrasions, contusions, and fractures following sudden physical contact with objects, which might occur in a vehicular accident, are not considered MSDs (Centers for Disease Control and Prevention, 2014).

Participation restriction is a barrier experienced by an individual during involvement in life situations.

Speech/Language impairments are basic categories of communication involving hearing, speech, language, and fluency; they are characterized by difficulty in the articulation of words. According to Batshaw (2002), examples include stuttering or problems producing particular sounds. A language impairment is specific to understanding, sharing thoughts and ideas, or processing linguistic information.

Associated problems can involve grammar, morphology, and syntax. The functional aspects of language can also be affected including semantics and pragmatics.

Chapter II

REVIEW OF THE LITERATURE

This review of literature related to the current study examines statistical and experimental research. A historical overview is presented of various legislation including the Rehabilitation Act of 1973, the Education for All Handicapped Children Act (EHCA) of 1975, the EHCA Amendments of 1983, and the Individuals With Disabilities Act of 1990. Studies focused on training institutions supporting disabled populations and various types of adaptive equipment are reviewed. Driver's-education curriculum within the state of New Jersey, as well as the importance of Individualized Educational Plans (IEPs), are also examined through past studies.

Related Statistical and Investigational Studies

The U.S. Department of Transportation (DOT), BTS (2016) estimated that, with nearly 4.2 million miles of roads and highways across the United States, driving is a profoundly deep-rooted activity in American culture. The Bureau described the nation's transportation system and provided information compiled by the BTS for the principle federal statistical agency at the DOT. Access to transportation options is a challenge for many disabled individuals with physical or cognitive impairment. However, changes have emerged since 1996 and progress has been made in the national transit fleet, rendering transit service accessible to the disabled. According to the U.S. DOT, BTS,

Through the installation of lifts and ramps or improvements in station infrastructure, people using wheelchairs or who have other travel disabilities now

find it easier to access transit than in the recent past. All but a few transit bus stations are now reported to be compliant with the Americans with Disabilities Act (ADA), the 1990 law that focused attention on [the] transportation needs of people with disabilities, as are nearly all transit buses (at least among those services that report to the Federal Transit Administration). Almost all cars in the heavy rail transit fleet are now ADA compliant, but just 52.7 percent of heavy rail stations (like subway stations). Similarly, in the case of commuter rail, 87 percent of the train cars are compliant, but only 68.5 percent of the commuter rail stations. As for demand response transit vehicles, where vehicles can be assigned based on a passenger's individual needs, about 87 percent of the fleet is reported to be accessible. (p. 52)

Although transportation services are attempting to increase necessary facilities for the disabled, research has indicated limited options. According to Heasley (2016),

In a review of 99 Medicaid waiver programs serving people with autism or other developmental disabilities across the country in 2013, a new study finds that most offered transportation services, but such rides were often only available for specific purposes like getting to and from work. Overall, 58 of the waivers reviewed provided transportation services and 71 included rides within other offerings like supported employment [and] residential or day services. Meanwhile, 13 of the waivers offered no assistance in getting from one place to another. Those with developmental disabilities face a host of barriers accessing public transportation, researchers said, meaning that rides provided through Medicaid waivers are often the only options for this population short of depending on friends and family. (p. 1)

“Mobility is a basic human need” and a necessity (Carmien et al., 2005, p. 237).

Yet, the most frequently reported problem by those with disabilities is transportation (Bernier & Seekins, 1999). While the BTS (2003) reported that 6 million people with disabilities experienced transportation problems, more recent reports have estimated 30% to 31% of all those with disabilities struggling with transportation (Feeley, 2009; Stock, Davies, Hoelzel, & Mullen, 2013; White, Simpson, Gonda, Ravesloot, & Coble, 2010). This compares with 3% of the nondisabled population who experience difficulty with transportation (BTS, 2003). The lack of accessible transportation is so problematic that

more than one-half million people with disabilities do not leave their homes (BTS, 2003; Feeley, 2009).

Friedman and Rizzolo (2016) reported that the most frequent problem for those living with a disability is limited or no public transportation; however, rural and urban dwellers with disabilities experience transportation problems very differently (BTS, 2003; Giertz, Hobden, & LeRoy, 2010; Seekins, Enders, Pepper, & Sticka, 2007). While those residing in urban locations are more likely to experience problems utilizing existing services, rural residents with disabilities are more likely to have no public-transportation services at all (Gonzales, Stombaugh, Seekins, & Kasnitz, 2006; Seekins et al., 2007). In fact, Williams and Thatcher (2012) estimated that 40% of U.S. counties have no public transportation.

Paratransit is often one of the only options in rural areas; however, this system can be very costly. It often delivers from door to door; however, it typically requires 24 to 48 hours notice and can therefore be inflexible (Bowe, 1979; Jansuwan, Christensen, & Chen, 2013; Sterns, Antenucci, Nelson, & Glasgow, 2003). Another option is real-time scheduling services such as taxis, which can be convenient but are often the most costly options. Other nontraditional services include fixed-route, accessible transit and route-deviation transit; the latter detours from the fixed route for pickups and drop-offs. Point-deviation transit has predetermined endpoints; however, passengers must call in advance, as with volunteer-driver programs, neighborhood circulators, ridesharing, and vouchers.

Those with disabilities who have access to public transportation often continue to have trouble with its use (Turnbull & Turnbull, 1985). Impairment can render public transportation more difficult because of system complexities, transfers, complicated

schedules, and cognitive load (BTS, 2003; Davies, Stock, Holloway, & Wehmeyer, 2010; Samuel, Lacey, Giertz, Hobden, & LeRoy, 2013). Even nondisabled individuals have frequent trouble with these aspects of public transportation; thus, the difficulties are likely to be systemic in nature rather than related to their impairments (Carmien et al., 2005). Inaccessible systems can cause problems both for vehicles and stations and terminals (Blais & El-Geneidy, 2014; Giertz et al., 2010). For example, inaccessible sidewalks and steep ramps, inadequate lighting, poor drainage, and short crosswalk times can all prohibit those with disabilities from accessing bus stops and transit stations (BTS, 2003; Haveman, Tillmann, Stöppler, Kvas, & Monninger, 2013)

The BTS (2003) found the most common subway problem for individuals with disabilities to be broken elevators, while the most common bus problems are inadequate seating, inaccurate schedules, safety concerns, and insensitive passengers. In addition to physical-accessibility problems, those with disabilities often have less available and flexible transit options than nondisabled populations (Jansuwan et al., 2013). Because of the link between disability and poverty, those with disabilities are also more likely to have trouble with transportation costs (BTS, 2003; Giertz et al., 2010).

Poor and inaccessible transportation has a significantly negative impact on the quality of life experienced by individuals with disabilities (Blais & El-Geneidy, 2014; Davies et al., 2010; Giertz et al., 2010; Samuel et al., 2013). Accessible transportation is critical for independent living (Bowe, 1979; Carmien et al., 2005; Davies et al., 2010; Fox-Grage & Lynott, 2015; Giertz et al., 2010; Haveman et al., 2013; Jansuwan et al., 2013; Sherman & Sherman, 2013; Turnbull & Turnbull, 1985; White et al., 2010). Accessible and appropriate transportation can serve as a collective gatekeeper to

independence and community. Inadequate transportation is a civil-rights issue because it prevents community inclusion and promotes dependence (Jansuwan et al., 2013; Turnbull & Turnbull, 1985). Turnbull and Turnbull (1985) went so far as to call this shortfall “symbolic of second-class citizenship” (p. 111).

According to the BTS (2004),

The number of disabled persons reporting participation in employment, recreational, and other activities steadily increased. In 2000, the Census Bureau estimated that roughly 25 percent of the 51 million Americans with disabilities between the ages of 16 and 74 were employed. In addition, [the] 1995 Census estimated that 25.9 percent of the 2.3 million long-term users of mobility equipment (e.g., wheelchairs [*sic*] canes, walkers, crutches) in this age group [*sic*] were employed—almost 600,000 individuals. (p. 1)

Inaccessibility to appropriate transportation can serve as an obstacle to necessary facets of independent living for those with disabilities such as integrated health care and physical activity (Davies et al., 2010; Samuel et al., 2013). Immobility limits work opportunities; hence, transportation is also critical for employment (Farber & Páez, 2010; Feeley, 2009; Mechling & O’Brien, 2010; Samuel et al., 2013). Lack of transportation can also increase social exclusion by serving as a barrier to leisure activities (Bowe, 1979; Davies et al., 2010; Haveman et al., 2013; Samuel et al., 2013).

Federal Law

According to Reyes (2005), the Rehabilitation Act of 1973 instituted landmark regulations for all individuals with disabilities, as introduced in Section 514 of the Act, which states,

No otherwise qualified handicapped individual in the United States shall, solely by reason of his handicapped [*sic*], be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal [*sic*] financial assistance. (p. 27)

This statement implies that no one with a disability can be denied admittance into any entity receiving federal funds, without exception and regardless of the monetary source. Reyes reported that Section 503 of the Act specifies that businesses under federal contracts receiving annual federal proceeds exceeding \$10,000 were to install affirmative-action plans to recruit, hire, train, and promote individuals with disabilities. Section 503 directly relates to transition in its threat to retract federal funding with violations involving (a) inaccessible work sites, (b) inappropriate recruitment and advertising sources, or (c) falsification of job requirements and essential functions (Rubin & Roessler, 2001).

The EHCA of 1975 made federal funds available for states to provide free public education for children with disabilities between 3 and 21 years of age (Kibbler, 1991). The Act was passed by Congress to ensure all children with disabilities would have access to free public education (Anstaett, 1990). During 1975, there were more than 8 million children with disabilities residing within the United States, of which a significant number had not received appropriate education affording them full access to equal employment opportunities (Kibbler, 1991). Honoring education as a state and local function, the EHA required each state to devise a statewide plan for meeting the minimal standards of the Act (Tate, 1980). More specifically,

the act defines free appropriate public education as “special education” and related services that: a) [*sic*] have been provided at public expense, but the public supervision and direction[*sic*], and without charge, (b) met the standards of the state education agency, (c) include an appropriate preschool, elementary, or secondary school education in the state involved, and (d) are provided in confronting [*sic*] with the individualized education program required under [the Act]. (Kibbler, 1991, p. 27)

Reyes (2005) advanced that, in addressing and setting the qualifications of the EHCA of 1975, Congress included a clause that focused on the appropriate nature of the educational program. According to Kibbler (1991),

It indicated that, in order for children with disabilities to receive services, the need for services must be demonstrated and contingent upon their Individual [*sic*] Educational Plan (IEP), which would determine the nature and extent of services. The process was finalized after the Congressional [*sic*] session, and the following requirements were decided upon: (a) a statement of the present levels of education know [*sic*] performance of such [*sic*] child, (b) a statement of annual goals, including short-term instructional objectives, (c) a statement of the specific educational services to be provided to such [*sic*] child, (d) the projected date for initiation and anticipated duration of such services, and (e) appropriate objective criteria, evaluation procedures and schedules for determining whether instructional objectives are achieved. (p. 27)

Kibbler found that children with disabilities were discriminated against due to separation within psychoeducational settings. They were excluded from participating within the basic classroom setting with nondisabled students. As a result, the EHA of 1975 was renamed the IDEA of 1990 and amended to bar segregation (Reyes, 2005). Two Acts were legislated from this action –the EHCA Amendments of 1983 and the Carl D. Perkins Vocational Education Act of 1984.

Section 626 of the EHCA Amendments of 1983 is the Secondary Education and Transitional Services for Handicapped Youth, which authorized the annual allocation of funds to support and coordinate educational services to youth with disabilities during the transition phase (Reyes, 2005). The major objectives of Section 626 involved provisions to (a) foster improvement of secondary special-education programs and (b) invigorate education and training and provide assistance in the transition process to youth with disabilities pursuing postsecondary education, vocational training, competitive employment, and continuing education (Gajar, Goodman, & McAfee, 1993).

Amendments to the IDEA of 1990 revised the mandate by instituting community integration and independent living as a primary focus of the transition process. Section 626 of the 1990 amendments highlights the administration of secondary education and

transitional services for adolescents with disabilities. The IDEA legislation defined transition as

a coordinated set of activities for students designed within the outcome-oriented process that promotes movement from school to post-school [*sic*] activities, including post-secondary [*sic*] education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, and community participation. (as cited in Rubin & Roessler, 2001, p. 368)

Rubin and Roessler (2001) noted that, based upon individual needs and similarities among student choices and interests, “transitional services include the components [of instruction, community-based experiences, and the use of adult living]” (p. 368). Its inception was motivated through dissatisfaction among members of Congress regarding the exclusion of children with disabilities from U.S. public schools and appropriate educational programs (U.S. Commission on Civil Rights, 1983).

According to Rubin and Roessler,

The IDEA contains stipulations concerning how a state must qualify in order to receive Federal [*sic*] grants. The requirements include the institution of procedures for identifying, locating, [and] evaluating all . . . children with disabilities and for ensuring that children [with] disabilities are educated with children without disabilities to the greatest extent possible. The IDEA requires each child with a disability to have an IEP developed to trace performance levels, annual goals, and instructional objectives, and requires modifications in assessing and testing, timelines, frequency, and location of services. In accordance with themes upheld by the 1992 and 1998 amendments, the IDEA emphasized the significance of school-to-work transition planning and services for students with disabilities and enhanced the statement of transition services with the IEP, which requires enabling activities to assist students in achieving post-school [*sic*] outcomes. (p. 69)

Training Institutions and Adaptive Equipment

Many businesses offer enhanced training for teens desiring to earn their driver’s licenses; however, few offer such instruction to special-needs students (Kozak, 2012).

One example is a driving school that estimates approximately 5,000 young drivers

reached on an annual basis, with 350 to 400 living with some form of physical or learning difficulty ranging from brain damage to attention-deficit hyperactivity disorder to mild autism. The Centers for Disease Control and Prevention (2014) published statistics that indicated teens from 16 to 19 years of age are already four times more likely than older drivers to crash. The described driving school claimed that adding a learning difficulty or physical disability to the mix can increase the risk of accident by as much as 400% (Kozak, 2012). Officials of the school stated that most driving schools “wouldn’t have a clue” how to handle a student with learning difficulties and that a comprehensive driver’s-education program would help to hone needed driving skills and mechanical awareness, as well as spatial awareness, coordination, and knowledge of traffic laws. According to Kozak (2012),

It is significant that students with disabilities practice fundamental skills. Students that have spina bifida have not had an opportunity to ride a bike, which develops skills for speed and perception. While these skills help inspire confidence and build capability in special needs students, they can also benefit young people who harbor a fear of driving. It is Langford’s belief that many teens delay receiving their certification because of fear and lack of confidence, not out of apathy. When in a driver education program all students are learning and obtaining valuable information and illustrations to become more comfortable, confident, and self-insured [*sic*] so that they can perform behind the wheel. When they work to overcome learning difficulties, physical disabilities, or fear in an effort to become skilled drivers, “they know they’re functioning at a higher level,” stated Langford. (p. 31)

Many different types of adaptive driving equipment can be utilized for disabled students. Once trained, the students learn specialized driving strategies (Mobility Works, 2014). Moore (2008) posited that, depending upon the disabled student, he or she may have physical limitations requiring evaluation for the ability to move quickly and with sufficient range to drive safety. Students with physical disabilities may benefit from adapted equipment such as spinner knobs, hand accelerators and brakes, and adapted

mirrors (see Appendix D). For students experiencing hearing loss or learning disabilities, strategies may consist of receiving a driver's-assessment booklet, which will identify road signs, explain different types of behind-the-wheel maneuvers, and provide practice test questions. Students with impaired vision would need to obtain special mirrors to compensate for difficulties with visual perception and acuity. Different types of glasses and/or an attachment to their glasses may be required to improve vision.

According to Moore (2009),

Teens with disabilities use adapted driving equipment and specialized strategies to learn to drive and . . . every licensed driver must pass the same driver assessment. The Wisconsin Assistive Technology Initiative pamphlet states "Any school district that offers driver education to the general student population must also offer it to students with disabilities, or contract with outside agencies to provide similar instruction to these students. . . . Not all students will have the potential to drive due to limitations created by their disability." The district (at least according to the Wisconsin pamphlet) is responsible for providing the funding to have a student assessed. The assessment can be done with a qualified agency like Adaptive Experts in Oakdale, MN for example, that specializes in assessment, rehabilitation and driver training. The ADED (Association for Driver Rehabilitation Specialists) website [*sic*] includes a fact sheet and considerations for various physical disabilities such as cerebral palsy, loss of limb, Multiple [*sic*] sclerosis and spina bifida. (p. 2)

As noted by the National Driver Education Standards Developments Committee (as cited in Moore, 2009), driver-education teachers typically are not trained to provide instruction to persons with special needs. They provide references to specialized professionals and/or agencies for evaluation and possible training.

Although students with disabilities are included in general-education classrooms within high schools, the ADA and IDEA preclude inclusion of driver-education classes. The curriculum guide and laws of these Acts require changes to such classes to provide for disabled students. The ability to access driving privileges allows for greater independence, self-esteem, responsibility, and employment opportunities, as well as general improvement in daily living. Such access provides a sense of freedom to those

with disabilities and control over their own quality of life. It is important that students with physical disabilities are offered the opportunity to participate in driver-education classes within the public/private schools they attend. According to the BTS (2004),

Many people with disabilities need specific types of modifications or adaptive equipment added to their motor vehicles to meet their transportation needs. As the technology has improved in quality and availability, the number of persons using adapted vehicles has also increased. The 1990 National Health Interview Survey (NHIS-D) estimated 299,000 adaptive equipment users, while the 1994 and 1995 NHIS-D estimated 510,000, (National Center for Health Statistics, 1998) an increase of 211,000 users over a five-year period. (p. 1)

New Jersey State Law

Curriculum

The *New Jersey Student Learning Standards for Comprehensive Health and Physical Education* (as cited in New Jersey State Department of Education, 2009) define health literacy as an integral component of 21st-century education. For example, healthy students are learners who are “knowledgeable, productive, and also emotionally and physically healthy, motivated, civically engaged, prepared for work and economic self-sufficiency, and ready for the world beyond their own borders” (as cited in Association for Supervision and Curriculum Development, 2004, p. 1). According to the Standards,

As part of the state’s initiative to prepare students to function optimally as global citizens and workers, the contemporary view of health and physical education focuses on taking personal responsibility for one’s health through an active, healthy lifestyle that fosters a *lifelong* commitment to wellness. The mission and vision for comprehensive health and physical education reflects this perspective: Mission: *Knowledge of health and physical education concepts and skills empowers students to assume lifelong responsibility to develop physical, social, and emotional wellness.* Vision: A quality comprehensive health and physical education program fosters a population that: Maintains [*sic*] physical, social, and emotional health by practicing healthy behaviors and goal setting, engages in a physically active lifestyle, is knowledgeable about health and wellness and how to access health resources, recognizes the influence of media,

technology, and culture in making informed health-related decisions as a consumer of health products and services, practices effective cross-cultural communication, problem solving, negotiation, and conflict resolution skills, is accepting and respectful of individual and cultural differences, and advocates for personal, family, community, and global wellness and is knowledgeable about national and international public health and safety issues. (p. 1)

The curriculum is divided into content areas and subsequently into the New Jersey standards for students with severe disabilities. Goals have been listed developmentally to address each standard and include corresponding teaching strategies. Cross Content Standard 4 serves the basic needs of multiply challenged populations by providing foundational behavioral goals and strategies essential for continued developmental progress.

The area of concentration within the New Jersey standards for students with severe disabilities is health education. Related standards are categorized into the following six areas: (a) health-promotion and disease-prevention concepts and health-enhancing behaviors; (b) health-enhancing personal, interpersonal, and life skills; (c) physical, mental, emotional, and social effects of the use and abuse of alcohol, tobacco, and other drugs; (d) the biological, social, cultural, and psychological aspects of human sexuality and family life; (e) movement concepts and skills that foster participation in physical activities throughout life; and (f) health-related fitness concepts. For each standard listed, goals, objections, strategies, and teacher material are provided.

Individualized Education Plan

In order to educate students with disabilities on the legal and systematic changes from high school to college, special-education teachers and IEP team members must be knowledgeable in these changes (Lightner, Kipps-Vaughan, Schulte, & Trice, 2012). The interest in ensuring such education partially stems from the federal requirement of the IDEA to provide students with disabilities access to the general-education curriculum. The IEP is a document developed for each public-school student eligible for special

education. The Plan is the result of a team effort and reviewed at least once per year (Baumel, 2010). Candidacy involves student eligibility for special education. Federal law mandates that a multidisciplinary team must determine that (a) the student has a disability, and (b) the student requires special education and related services to benefit from the general-education program.

Both Title I of the Elementary and Secondary Education Act of 1997, as amended by the No Child Left Behind Act of 2002 and the IDEA of 1997 on modified academic-achievement standards, require that students who receive an alternate assessment must have access to and instruction in grade-level content (Holbrook, 2007). In addition, these regulations require that the IEPs of these students include grade-level content goals and standards and provide monitoring of their progress toward achievement of those goals. The IDEA of 1997 requires certain information to be included in IEPs but does not specify the format. Because states and local school systems may include additional information, forms differ from state to state and may vary between school systems within any given state (Baumel, 2010). According to Holbrook (2007), “With increasing accountability for improving the academic achievement [of] students with disabilities, school-based professionals have become more invested in the development and use of standards-based Individualized Education Programs (IEPs)” (p. 1). A standards-based IEP is constructed by the IEP team who incorporates state content standards in its development. Many professionals, including family members, view standards-based IEPs as best practice in order to create high expectations for students with disabilities.

Inclusive Education and Theory Related to Disabilities

Freire (1968/1970) advanced a foundation for inquiry into how individuals think about and act upon the situations they encounter within K–12 education. This researcher stated,

While people think about, and act upon, their situation in the world of K–12 education [and] while the problem of humanization has always, from an axiological point of view, been humankind’s central problem, it now takes on the character of an inescapable concern. Concern for humanization leads at once to the recognition of dehumanization, not only as an ontological possibility but as an [*sic*] historical reality. And as an individual perceives the extent of dehumanization, he or she may ask if humanization is a viable possibility. Within history in concrete, objective contexts, both humanization and dehumanization are possibilities for a person as an uncompleted being conscious of their incompleteness. But while both humanization and dehumanization are real alternatives, only the first is the people’s vocation. This vocation is constantly negated, yet it is affirmed by that very negation. It is thwarted by injustice, exploitation, oppression, and the violence of the oppressors; it is affirmed by the yearning of the oppressed for freedom and justice, and by their struggle to recover their lost humanity. (p. 2)

With regard to the teacher-student relationship, Freire (1968/1970) stated,

At any level inside or outside the school, [the teacher-student relationship] reveals its fundamentally *narrative* character. This relationship involves a narrating Subject [*sic*] (the teacher) and patient, listening objects (the students). The contents, whether values or empirical dimensions of reality, tend in the process of being narrated to become lifeless and petrified. Education is suffering from narration sickness. The teacher talks about reality as if it were motionless, static, compartmentalized, and predictable. Or else he expounds on a topic completely alien to the existential experience of the students. His task is to “fill” the students with the contents of his narration — contents which are detached from reality, disconnected from the totality that engendered them and could give them significance. Words are emptied of their concreteness and become a hollow, alienated, and alienating verbosity. (p. 21)

According to Theoharis and Causton-Theoharis (2008), when we give school administrators a foundation in oppression, and we come back to them again and again

with why exclusion does not work, and we give them ways to think about their schools differently, resistance to inclusive leadership is observed to subside.

Teacher-Student Relationships

Been (2012) proposed that research into inclusive education is largely focused on one perspective at a time (i.e., the teacher or parent view) without accounting for varied interpretations of, and experiences with, inclusion. Disability-specific studies seldom differentiate students with severe disabilities from those with mild or moderate disabilities. Inclusive education is typically viewed as two separate systems and research that does not account for multiple perspectives on the issues of students with severe disabilities. The Been research encompassed multiple and in-depth perspectives, targeting the hardest-to-teach students and bridging gaps in understanding surrounding the home, school, and community learning environments. According to Been, the following questions represent issues that manifest while teaching students with severe disabilities:

1. Do we challenge them or overprotect them?
2. How comfortable are we when interacting with them?
3. How optimistic is our attitude?
4. Do we place conditions on what and where they can be taught?
5. Are we restricted by rules and regulations?
6. What is the role of education assistants? Do we utilize them? (p. 1)

Understanding the multiple perspectives of inclusion and the complex and contentious issues involved in parent, teacher, and administrator views of inclusive education for students with severe disabilities is key. Reform initiatives addressing diversity in education must also address the needs of students to become valued, contributing citizens within the adult world (Theoharis & Causton-Theoharis, 2008).

When we instill these beliefs in our students, they can lead in a manner systematically creating a more just society. They do not choose to be oppressors; they choose to be emancipators.

Forlin, Chambers, Loreman, Deppler, and Sharma (2013) reported on the definition of *inclusive education*, stating that it is a contentious term that lacks a tight conceptual focus, which may

contribute to some misconception and confused practice. In relation to students with disability, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) first stated in 1994 that inclusive schools were the most effective way to counter discriminatory approaches and attitudes towards students. International legislation and policy subsequently evolved to challenge exclusionary practices and focus attention on equity and access to high-quality education for all, while respecting diversity (UNESCO, 2008). According to UNESCO (2009) . . . “an ‘inclusive’ education system can only be created if ordinary schools become more inclusive – in other words, if they become better at educating all children in their communities (p. 8)” [*sic*]. Article 24 of the UN Convention of the Rights of Persons with Disabilities recognizes that education should be accessible “without discrimination and on the basis of equal opportunity . . . within an inclusive education system at all levels.” . . . It is widely acknowledged, nonetheless, that children with disability continue to experience different forms of exclusion which vary depending upon their disability, domicile, and the culture or class to which they belong. (pp. 7–8)

Inclusion in education is recognized as a basic human right and the foundation for a more just and equal society (European Agency for Development in Special Needs Education, 2012). It is, however, an increasingly contentious term that challenges educators and educational systems to rethink the work of teaching and learning from varied perspectives (Forlin et al., 2013). According to Grima-Farrell, Bain, and McDonagh (2011), “Inclusive education represents a whole-school concern and works to align special education with general education in a manner that most effectively and efficiently imparts quality education to all students” (p. 118).

The issue of equity has been a major force on an international scale, underpinning the movement toward a more inclusive educational system and the manner in which inclusion is defined (Forlin, 2012). Loreman (2009) argued, “The majority of educators know very well what inclusion is, but it is sometimes politically expedient for them to manipulate the term to suit whatever practice they happen to be currently engaged in, be it inclusive or not” (p. 43). It is also possible that lack of a tight conceptual focus on the problems of inclusive education may have contributed to misconception and confused practice (Berlach & Chambers, 2011). According to Graham and Jahnukainen (2011), “While some might say that we have witnessed the ‘globalization of inclusion,’ questions remain as to what has spread” (p. 263).

International Policies

Forlin et al. (2013) noted that scholars, practitioners, governments, and organizations, such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the United Nations International Children’s Emergency Fund, have also provided conceptualizations and definitions of inclusive education. Ainscow, Booth, and Dyson (2006) proposed a typology of six ways of thinking about inclusion—(a) as a concern for students with disabilities having special educational needs; (b) as a response to disciplinary exclusion; (c) in relation to all groups as vulnerable to exclusion; (d) as developing the school for all; (e) as education for all; and (f) as a principled approach to education and society. International human-rights agreements, covenants, and legislation thus provide definitions that are critical for understanding and implementing inclusion because they often bind all signatories and flow on to influence national legislation.

It is uncommon to address the topic of inclusive education in the context of democracy or within the broad ambit of social policy, but to do so in recognition of the limits of our understanding, and particularly the constraints of our own cultural and ideological perspectives, demonstrates progress (Daniels & Garner, 1999). Knowledge of the experience of education within the United States can either shape or limit our understanding of the issues. Daniels and Garner (1999) reported that Dyson posited a theory of multiple inclusions based upon a set of contrasting discourses. On the one hand, we are at a relatively early stage in defining and articulating inclusive practices, however long its philosophical pedigree might be. Yet, a reinforcement of postmodern individuality based upon culture and history has occurred. The tension between establishing newly inclusive operations within exclusive societies will be conditioned by national identity and future vision.

Inclusive education has become so central to the education policies of large numbers of countries in both the developed and developing world that commentators have been able to describe it, without exaggeration, as “a global agenda” (Pijl, Meijer, & Hegarty, 1997, p. 2). Dyson (1999) has concurrently suggested that other commentators have viewed this apparently sudden rise with alarm and inclusion, not the obvious way forward into the next millennium, but rather, as a “special-education bandwagon” (Kauffman & Hallahan, 1995, p. 222). According to Dyson, these mixed reactions are, to a large extent, attributable simply to the discrepant educational and, ultimately, political and ethical positions adapted by these commentators.

In 1994, Dyson (1999), along with representatives of 88 national governments and 25 international organizations concerned with education, met in Salamanca, Spain, under

the auspices of UNESCO and the Spanish government. Together, they created the *Salamanca Statement on Principles, Policy and Practice in Special Needs Education*, along with its accompanying draft of a framework for action (UNESCO, 1994, p. 36).

The document outlines rights in education and highlighted the *Universal Declaration of Human Rights* (UN, 1948) and the *United Nations Standard Rules on Equalization of Opportunities for Persons with Disabilities* (UN Department of Public Information, 1994). Dyson documented the following five principals from these rights:

1. Every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning;
2. Every child has unique characteristics, interests, abilities and learning needs;
3. Educational systems should be designed, and educational programmers implemented, to take into account the wide diversity of these characteristics and needs;
4. Those with special educational needs must have access to regular schools, which should accommodate them within a child-centered pedagogy capable of meeting these needs;
5. Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society, and achieving education for all; moreover, they provide an effective education to the majority of children, and improve the efficiency and, ultimately, the cost-effectiveness [*sic*] of the entire educational system. (p. 37)

According to Dyson (1999),

The *Salamanca Statement* is currently proving extremely powerful as means of stimulating educational change. Even the UK Government [*sic*], not known for looking beyond its national boundaries for education policies, nor, indeed, for subscribing readily to international proclamations, had declared its support for Salamanca, and announced a policy of inclusion (DfEE, 1997). However, despite all its power, the *Salamanca Statement* remains a deeply ambiguous document, constituting a somewhat shaky platform on which to base policy. Some of these ambiguities are evident in the principals quoted above. Much of this text is couched in an absolutist language of rights and moral imperatives-every child has a *right* to education; education systems *should be* designed to take into account children's characteristics; those with special needs *must* have access to regular schools-and so on. This is supported by absolutist characterizations of the human

condition – “every child *has* [or] can be seen as having unique characteristics, interests, abilities and learning needs.” (p. 37)

Although some of the language in the principles underlying the described rights in education could be viewed as acceptable terms for fundamental principles and values, the despotism contributions to the pragmatic domain might be somewhat less appropriate.

Dyson (1999) noted,

For instance, we are told that “regular schools” with [an] inclusive orientation are the most effective means of . . . and then there follows a list of what we can expect from inclusive schools—building a better society, offering an effective education to the majority of children, and improving the efficiency of the education system as a whole. These claims may well be true, but they are, of course, claims of a quite different order from the earlier statements of principle; whether inclusive schools actually offer an effective education is, we might think, a matter for empirical investigation in a way that the right of every child to an education is not. (p. 37)

According to Dyson (1999), assertions are made about the necessity of a “child-centered pedagogy,” if the aims of inclusion are to be realized (p. 38). Again, there is ambiguity here. The assertion appears to be an empirical one, which demands to be tested; it is at least possible that some other form of pedagogy might prove to be more inclusive (p. 38). Recently, within the United Kingdom, assertions have been made that the child-centered approach, which has been characteristic of the system within the country for 3 decades and more, is an inappropriate response to diversity (Reynolds & Farrell, 1996). Dyson also noted that this is not transparent as to the meaning of child-centered pedagogy and that various pedagogical techniques exist that can claim the individual child as their starting point. However, the *Salamanca Statement* declines to specify which of these techniques fall or do not fall within its definition.

Dyson (1999) outlined schools with an inclusion orientation, outlining what they would look like, the characteristics rendering them inclusive, and which characteristics lead to a categorization of exclusive. He noted,

Is the all-important “orientation” a matter of structure, of practices, or of attitude? And does an inclusive school educate *every* child in its neighborhood? Or just *most* children? Or *more* children than other schools in its particular education system? Indeed, the very notion of “inclusive” is ambiguous in the *Salamanca Statement*. We might believe that inclusion as a right applies to all children and, therefore, that all children should be taught in inclusive regular schools. However, *Salamanca* talks about inclusive schools offering an effective education only to a *majority* of children. Where, then, are the minority educated? And what is the “right” to education? Is it a right to placement in a regular school, or simply the right to be offered an education in a school of some sort. (p. 38)

Dyson further stated that such ambiguities are, of course, only to be expected in such a document as the *Salamanca Statement*, which is essentially the outcome of political processes and compromises. In addition, as a piece of polemic, it is enormously powerful. Its ambiguities would be of little significance if they did not reflect those underlying the inclusion movement.

Academic Disciplines

Siebers (2008) advanced that disability theory pursues three interlocking agendas. First, it proposes an intervention from the perspective of disability research and major debates of the last 30 years focused on critical and cultural theory. Second, it may also be thought of as an intervention within the field of theory, although at the most general level because representation has been one of the most significant issues in related critical and cultural theory since the emergence of structuralism during the 1960s. Third, disability theory views disability as a minority identity with particular characteristics that contribute to the advancement of minority studies in general. While historically

perceived as a matter for medical intervention, disability has been described more recently in related studies as a minority identity that must be addressed not as personal misfortune or individual defect, but rather, as the product of a disabling social environment.

Disability study is an academic discipline that examines the meaning, nature, and consequences of disability. Initially, the field focused on the division between impairment and disability, with impairment referring to the impairment of mind or body and disability considered a social construct (Modern Language Association, 2013). This premise gave rise to two distinct models of disability—social and medical (Siebers, 2008). In 1999, the social model was universally accepted as the model preferred within the field (Bickenbach, Chatterji, Badley, & Üstün, 1999). However, in recent years, the division between the social and medical models has been challenged (Dewsbury, Karen, Randallb, Rouncefield, & Sommerville, 2010; Modern Language Association, 2013). Additionally, increased focus is evident on interdisciplinary research (Society for Disability Studies, 2016c). For example, recent investigations suggest using “cross-sectional markers of stratification” (Siordia, 2014, p. 4) to potentially glean new insight on the nonrandom distribution of risk factors capable of exacerbating disablement processes.

Disability studies emerged during the 1980s, primarily within the United States, United Kingdom, and Canada. In 1986, the Section for the Study of Chronic Illness, Impairment, and Disability of the Social Science Association (i.e., in the United States) was renamed the Society for Disability Studies (2016b). The first U.S. disabilities program was introduced during 1994 at Syracuse University (Simon, 2013). The first

edition of the *Disabilities Studies Reader*—one of the first collections of academic papers related to disability studies—was published in 1997 (Davis, 1997). The field grew rapidly over the following 10 years. In 2005, the Modern Language Association established disability studies as a “division of study” (Simon, 2013, p. 1).

Universities have produced disability studies from a clinical perspective for many years (Simon, 2013). However, very few courses and programs existed. In the first edition of the *Disability Studies Reader*, Davis (1997) wrote that it was virtually impossible to teach a disability curriculum within the humanities. In the second edition, written 10 years later, he wrote that all this had changed but, just because disability studies were on the map, did not mean they were easy to find (Davis, 2006). Siebers (2008) reported that the field of disability continued to grow throughout the 2000s. In 2009, *Disability Studies Quarterly* published a multinational review of English-language disability studies and associated degrees and courses (Cushing & Smith, 2009). From 2003 to 2008, the number of standalone courses focused on disability studies within the United States, United Kingdom, Australia, New Zealand, and Canada grew from 56 to 108, and the number of degree-granting courses grew from 212 to 420. A total of 17 degrees in disability study were offered, with 11 programs in the United States, two in the United Kingdom, three in Canada, and one in Australia.

According to Simon (2013), a 2014 New York Times article entitled *Disability Studies: A New Normal* suggested that the expansion of disability-study programs is related to the 1990 passage of the ADA. Students who participated in programs introduced after passage of the ADA entered colleges and the workforce as disability studies were increasing in number. Stout and Schwartz (2014) analyzed the relationships

between student-run groups and disability studies published from 2008 to 2012 at four different universities. These investigators described how professors have incorporated student activism into their curriculum and research.

According to the Society for Disability Studies (2016a), using an interdisciplinary, multidisciplinary approach, disability lies at the “intersection” of many overlapping disciplines in the humanities, sciences, and social sciences. Programs in disability study sought to encourage a curriculum allowing students, activists, teachers, artists, practitioners, and researchers to engage the subject matter from various disciplinary perspectives. Challenging the view of disability as an individual deficit or defect that can be remedied solely through medical intervention or rehabilitation by “experts” and other service providers, it was recommended that disability studies explore models and theories examining social, political, cultural, and economic factors defining disability and helping to determine personal and collective responses to differences among these factors. It was also suggested that such research concurrently work to eliminate the stigmatization of disease, illness, and impairment including that not measurable or explainable by biological science. Additionally, while acknowledging that medical research and intervention can be useful, disability studies were expected to explore the connections between medical practice and stigmatizing disability.

Studying national and international perspectives, policies, literature, culture, and history with the aim of placing current ideas of disability within their broadest-possible context also defines disability study. Because attitudes toward disability have not been consistent across time and place, much can be gained by learning from international experience. Participation by disabled students and faculty must be encouraged, ensuring

physical and intellectual access. It is important to equitably consider disabled individuals for leadership positions while concurrently creating an environment where contributions from anyone sharing the described goals are clearly welcome (Society for Disability Studies, 2016c, p. 1)

Conclusion

Although students with disabilities are included in general-education classrooms within high schools, the ADA of 1990 and the IDEA of 1997 preclude inclusion of driver's-education classes for this student population. These students would have an opportunity to engage in a richer social life with the increased mobility, responsibility, and independence that driving would provide. Greater social participation would also expand lifestyle options and potentially increase the quality of life for students with disabilities. Adjusting driver education to more easily include students with disabilities appears to be a legal requirement based upon Section 504 of the Rehabilitation Act of 1973 and the IDEA (as cited in McGill & Vogtle, 2001). Section 504 of the Rehabilitation Act of 1973 protects students attending programs receiving federal funding, including public school systems, against discrimination on the basis of disability. Additionally, the IDEA requires that students with disabilities are provided a free appropriate education and related services and that they are educated with youth who are not disabled to the maximum extent appropriate (as cited in McGill & Vogtle, 2001).

With regard to driver's education within public schools, it seems that ignoring the issue or referring to external agencies is the norm. Referral tends to be motivated by the lack of necessary adaptive driving equipment and inadequately trained driver's-education

teachers. Most instructors are not trained to effectively teach students with physical disabilities. Limited knowledge or experience in manipulating any of the vast products and devices to assist students with disabilities, as well as educating students on their proper use, often presents an exhausting scenario. The cost surrounding liability protection, as it relates to driver's-education programs, is also problematic. However, the expense of excluding students with disabilities from high-school driver's-education programs could be as significant, depending upon the need for assessments and external driver training. All of these issues present delays in driver training and leave disabled students feeling unsure of their desire to learn to drive at all.

The IEP, required since the EHCA was passed in 1975, is a legally binding document addressing the need for transition services for annual and short-term student objectives. School systems must be responsible for the plan detailed in the IEP (Wehman, 1997) and address all related concerns. Inclusion of driver's education on the IEPs of students with physical disabilities will help schools establish a definitive course of action regarding this issue, ensuring that students with such disabilities receive driver training (McGill & Vogtle, 2001). Depending upon the condition and seriousness of the disability, the IEP assessment should indicate the need for a thorough predriving evaluation to determine driving potential. School systems must refer these students to facilities trained to perform such evaluations prior to student enrollment in driver's education.

Research has documented that disabled students present a diverse spectrum of learning and physical needs related to driver's education (McGill & Vogtle, 2001). When compared to students without disabilities, disabled learners have distinctly

different learning styles and physical requirements. McGill and Vogtle (2001) reported that few studies exist addressing the inclusion of students with disabilities in high-school driver's-education programs. Further research is needed to address the role of the school system in providing driver's education to students with physical disabilities (p. 6).

Chapter III

METHODOLOGY

Research Design

Research design is generally based upon a social-constructivism perspective with the research problems becoming the research questions. Based upon prior studies, decisions are made pertaining to the sample size and whether data collection involves interviews, observation, and/or document review. Data interpretation is based upon a combination of researcher perspective and the data collected (*Research Rundown*, 2018).

This current study was conducted with a focus on students with disabilities who desired to learn how they could participate in driver's education. Participants were recruited from respondents to a demographical survey and selected according to study criteria including their type of disability, grade level, and learning ability. Of all respondents, 58 were selected to participate in the study—37 males and 21 females. The survey was useful in determining unique data pertaining to each participant. An interview protocol was developed to collect the unique lived experience of each participant of the focus groups, as those experiences related to driving.

Qualitative research is a scientific method of observation applied to gather nonnumerical data (Babbie, 2014). This type of research “refers to the meanings, concepts definitions [*sic*], characteristics, metaphors, symbols, and description of things” and not to their “counts or measures” (Berg & Lune, 2012, p. 3). Qualitative research approaches are employed across many academic disciplines, focusing particularly on the

human elements of the social and natural sciences (Given, 2008). These methods are best for researching many of the *why* and *how* questions of human experience.

According to the Qualitative Research Consultants Association (2018),

Qualitative research is designed to reveal a target audience's range of behavior and the perceptions that drive it with reference to specific topics or issues. It uses in-depth studies of small groups of people to guide and support the construction of hypotheses. The result of qualitative research are [*sic*] descriptive rather than predictive. Qualitative research methods originated in the social and behavioral sciences, sociology, anthropology, and psychology. (p. 1)

According to Berg, Lune, and Lune (2004),

The formally trained researcher stands with and alongside the community or group under study, not outside as an objective observer or external consultant. The researcher contributes expertise when needed as a participant in the process. The researcher collaborates with local practitioners as well as stakeholders in the group or community. Other participants contribute their physical and / or [*sic*] intellectual resources to the research process. The researcher is a partner with the study population; thus, this type of research is considerably more value-laden than other traditional research roles and endeavors. The approach a researcher takes when conducting action research, therefore, must be more holistic, encompassing a broad combination of technological, social, economic, and political aspects of relationships and interactions between the researcher and the stakeholders in the project. (p. 202)

The purpose of application of this basic qualitative design approach to the current study was to understand the meaning attributed to the student experience. The main focus was to understand the student experiences surrounding the opportunity to participate in a driver's-education program.

Data Collection

Study Setting

The current study was conducted at Great School, which is located in the northeastern region of the United States. The school was founded in the early 1920s and

opened its doors 10 years later to meet the needs of disabled students. The aim for the school was to provide educational facilities for physically handicapped students, and it was the first school within the United States to be built wholly and expressly for orthopedically handicapped children. The school is equipped with elevators, space for physiotherapy, and a lunchroom. On opening day, 43 students were enrolled for classes. The site has been transformed into a demonstration school and has been historically dedicated to the education of youth with disabilities 3 to 21 years of age, empowering these students to become contributing and productive members of society. For over 80 years, comprehensive programs have been offered to promote the belief that meaningful, educational, therapeutic, and social experiences will encourage students to mature to their highest potential. Over 180 students were served by the school at the time of this study.

The staff at Great School includes a principal, an assistant principal, a supervisor for curriculum and instruction, 24 special-education classroom teachers, six special educators, five physical therapists, five occupational therapists, three speech therapists, one music therapist, one registered nurse, one licensed practical nurse, one coordinator, one social worker, one tech coordinator, 26 classroom assistants, four program aides, three teaching assistants, one dietitian, and eight service workers. The six special educators include a health specialist, an art teacher, a home-economics teacher, a teacher of English as a second language, an occupational worker, and a physical-education teacher. A Child Study Team is composed of a school psychologist, a learning-disabilities teacher consultant, a speech therapist, and a social worker of the local school district. An intake session is conducted to ensure the needs of each student are addressed

in his or her IEP. Students seeking to attend the school must progress through the IEP process in order to enroll.

Recruitment Procedures and Study Participants

Permission to conduct the current study was obtained through the Institutional Review Board (IRB; see Appendix A). A recruitment announcement was subsequently made to bring awareness of the study and its purpose to potential participants interested in learning about driver's education for disabled students. Participants were selected following completion of a demographical survey and assessment of the nature of their disabilities.

Qualitative, one-on-one or group interviews represent one method of collecting data (Fink, 2000). Other techniques include participant observation, document review, and discourse analysis—all of which are applied in anthropological and ethnographic research (Burgess, 1984; Sanday, 1979). According to Kvale (1996), interviews conducted with the purpose of obtaining descriptions of the worldviews of the interviewees related to the phenomena under study (p. 5).

Informed consent was provided by all potential participants in the current study and parental permission was collected for those of minor age. These forms were available in both Spanish and English and explained the purpose of the study in terms of exploring and more clearly understanding the views of students with disabilities surrounding the process of learning to drive. The confidential nature of data collection and related procedures was also detailed, as well as the right of all participants to withdraw from the study at any time without penalty. Those who ultimately participated in the study did so on a strictly voluntary basis. From the study invitation, 58 students

completed the survey—64% males ($n = 37$) and 36% females ($n = 21$). The greater number of males was due to the higher male enrollment at the study-site school.

Instrumentation, Interviews, and Focus Groups

Qualitative work requires reflection on the part of researchers, both before and during the research process, as a way of providing context and understanding for readers (Sutton & Austin, 2015). During such thoughtful activity, investigators must not ignore or avoid their own biases, but rather, reflect upon and clearly articulate their positions and subjectivities (i.e., worldviews and perspectives, as well). Thus, readers can better understand the filters through which questions were asked, data were gathered and analyzed, and findings were reported. From this perspective, bias and subjectivity are not inherently negative but unavoidable. Consequently, it is best they are articulated on the front end in a manner that is clear and coherent to readers.

Regardless of the philosophical standpoint of the researcher and the data-collection method (e.g., focus group or one-on-one interviews), large amounts of data will be generated (Sutton & Austin, 2015). In addition to the variety of study methodologies available, many different ways of recording the data exist such as handwritten notes or video recording. When video or audio recording is implemented, the recordings must be transcribed verbatim before data analysis can begin. Many researchers will also maintain field notes to complement audiotaped interviews and allow the researcher to capture and comment upon impressions, environmental contexts, behaviors, and nonverbal cues. Field notes can provide important context to the interpretation of audio-taped data and can help remind the researcher of situational factors that may be important during data analysis. Such notes need not be formal;

however, they should be maintained and secured in a similar manner to audio tapes and transcripts because they contain sensitive information highly relevant to the research.

An effective qualitative researcher asks probing questions, listens, reflects, and asks additional probing questions to encourage deeper levels of conversation. Such an investigator also considers ideas and theories from a wide variety of sources (Simon, 2011). In the current study, student demographical information was obtained via the data-collection survey (see Appendix B). This included student age, gender, disability, grade level, and learning ability. The survey was also used to notate unique information pertaining to each participant.

An interview protocol (see Appendix C) was used in the focus groups conducted in this study. This facilitated consistent collection of (a) the unique lived experience of each participant and the impact of driving on his or her life, and (b) the perceptions of the participants as they related to driving. The interviews were conducted at the study-site school within the privacy of a classroom. Six focus groups were held during 1 week, each with 10 participants, with the exception of one group of nine students. Each session was held for no more than 1 hour and the students were of different ages and with different disabilities. The groups were recorded for the accurate capture of data.

The focus-group data provided valuable insight into the beliefs and emotional views of the participants regarding driver's education. I personally collected the data for the study and utilized instruments I created. I had a good relationship with the students, which allowed the collection of rich data. The recorded interviews were transcribed by me and the data were entered into an Excel spreadsheet and subsequently analyzed.

Data Analysis

Qualitative research results in large amounts of contextually laden, subjective, and richly detailed data, typically originating from interview transcripts or observation notes. This volume of data must be organized into major themes or categories that describe the phenomenon under study (Byrne, 2001). According to Byrne (2001),

Data reduction facilitates communicating findings simply and efficiently with paring and sieving of data [which is] often . . . termed thematic analysis and all qualitative research studies are unique and thus demand unique strategies for analysis. Qualitative data analysis consists of identifying, coding, and categorizing patterns found in the data. The clarity and applicability of the findings, however, depend on the analytic intellect of the researcher. This dependence on the human factor can be the greatest strength or the greatest weakness of a qualitative research study. It is incumbent on the researcher to report and document his or her analytic processes and procedures fully and truthfully so others may evaluate the credibility of the researcher and his or her findings. (p. 904)

According to Boyatzis (1998), thematic analysis is a way of “seeing,” as well as a process for coding qualitative information. Byrne (2001) stated,

An analogy of thematic analysis is sorting a box of buttons. One can determine different strategies or categories to describe the buttons. They could be grouped according to size, number of holes, color, or type. In the same manner, the researcher must make many decisions about the process of identifying themes, and he or she must inform others why specific categories were chosen. (p. 904)

Another decision that must be made by researchers analyzing data is whether to analyze interview data obtained from each participant independently or implement cross-case analysis (Patton, 1990). The decision as to whether to manually create a code to label the findings or apply computer software specifically designed for qualitative data management must also be considered (Byrne, 2001).

As noted earlier, the data from the survey were entered into an Excel spreadsheet and subsequently analyzed. The particular demographic characteristics collected, such as

age, number of years in attendance at the study-site school, whether they had already graduated, gender, race, disability, income, and social-security status were data points recommended by the *Health Assessment Guide* (see Appendix B). The findings are reported as descriptive data.

The qualitative portion of the current study, or the focus-group interviews, were transcribed and analyzed for emergent themes (Merriam & Tisdell, 2015). The potential role of driving in improving overall well-being, as well as feelings from, and perceptions of, having access to driver's education and the chance to obtain a driver's permit and the perceived benefits and barriers were obtained from the student interviews. These same topics served as the initial coding categories (see Appendix C).

Role of the Researcher

In qualitative research, the investigator is considered an *instrument* of data collection (Denzin & Lincoln, 2003). This means that data are mediated through this human instrument, rather than through inventories, questionnaires, or machines (Simon, 2011). According to Simon (2011), to fulfill this role, readers of the research must know of the human instrument. The qualitative researcher needs to describe relevant aspects of self, including any biases and assumptions, expectations, and experiences, to qualify his or her ability to conduct the research (Greenbank, 2003). Such researchers should also disclose whether their role is emic (i.e., an insider who is a full participant in the activity, program, or phenomenon under study) or a more etic role (i.e., from the outside view of an objective participant (Simon, 2011). There are many variations in between. A

researcher can begin a study as an outsider and later become a member of the group or vice versa (Punch, 1998).

At the time of this study, I was employed as a health specialist within the Great School located in an inner city within the northeast region of the United States. My degree in health sciences, with a minor in community health and certification in teaching and driver's education, with years of educational instruction and background knowledge, provided the necessary framework and discipline to conduct this study. I taught health education to more than 180 disabled students in 24 special-education classrooms of different grade levels and served as a collaborative teacher with classroom educators. I implemented IEP goals and modified curriculum as necessary. I was responsible for the IEP of each individual student and worked with the Child Study Team in writing all aspects of the report including goals and objectives, accommodations, and reporting academic attendance and participation. The students were disabled, from 14 to 29 years of age, and attending middle school or high school or participating as alumni. I had developed a teacher-student relationship with all of the participants.

Ethical Consideration

My training and testing by the Collaborative Institutional Training Initiative Program developed my understanding of the rights and protection of human subjects. I completed the training in December 2016. Prior to the onset of this study, I informally asked the potential student and alumni participants about their interest in participating in the study on a voluntary basis. I strived for honesty in all scientific communications, reports, data collection, results reporting, methods application, and procedures in order to

protect confidentiality (Resnik, 2011). The study was approved by both IRBs on March 2007 and December 2016. Prior to beginning the study, an official approval letter was also provided by the principal of the study site, and an application for the review of the research procedures and guidelines was provided by the IRB.

Following approval by the IRB, data collection was completed following the receipt of informed consent by all participating students; parental permission was also collected for those of minor age. As noted earlier, the consent forms were available in both Spanish and English and all participants were advised of the purpose of the study. They were free to ask questions for clarification. I ensured all had a clear understanding of the study, and I was aware of the feelings of the students surrounding the process of learning to drive. I protected the confidential nature of the data collection and related procedures at all times and reminded all participants of their right to withdraw from the study at any time without penalty.

Limitations

The major drawback associated with qualitative research methods and analysis is the time consumption of the process (Chetty, 2016). Qualitative study requires thoughtful planning. The collection of all documentation from the study sample, the recording of information, and the scheduling and conduct of focus groups all entails a great deal of time. The second potential problem with qualitative research is that a particular problem could go unnoticed (Bowen, 2006). Additionally, research interpretations are limited and personal experience and knowledge can easily influence

the observations and conclusions related to the research problem under study (Chetty, 2016).

After categories or themes have been coded, researchers must decide the manner in which they wish to report the findings (Byrne, 2001). Data can be presented in chronological order or by key events, various settings, individuals, or by processes or issues related to the study (Patton, 1990). Other researchers have suggested the use of metaphors to communicate themes (Kangas, Warren, & Byrne, 1998). A schematic drawing or conceptual framework are other strategies. According to Byrne (2001),

Qualitative research frequently results in a large amount of data that is derived from observing or interviewing research participants. The researcher must analyze this [*sic*] data thoroughly. Although it is feasible to conduct data analysis manually, using software specifically designed for qualitative data management may make the process easier. After completing data analysis, the researcher must disseminate information about his or her findings. The researcher must choose a dissemination method that is congruent with his or her research study to assist others in understanding the credibility of his or her conclusions. (p. 905)

According to Sutton and Austin (2015),

Qualitative research can help researchers to access the thoughts and feelings of research participants, which can enable development of an understanding of the meaning that people ascribe to their experiences. It can be used in pharmacy practice research to explore how patients feel about their health and their treatment. Qualitative research has been used by pharmacists to explore a variety of questions and problems. An understanding of these issues can help pharmacists and other health care professionals to tailor health care to match the individual needs of patients and to develop a concordant relationship. Doing qualitative research is not easy and may require a complete rethink of how research is conducted, particularly for researchers who are more familiar with quantitative approaches. There are many ways of conducting qualitative research, and this paper has covered some of the practical issues regarding data collection, analysis, and management. Further reading around the subject will be essential to truly understand this method of accessing peoples' thoughts and feelings to enable researchers to tell participants' stories. (p. 230)

Qualitative research is primarily open-ended; the participants have greater control over the content of the data collected. Therefore, the researcher is unable to verify the

results objectively against the scenarios described by the respondents (Chetty, 2016). Qualitative study requires a labor-intensive analysis process, often including categorization and recoding (Elo & Kyngäs 2008). Similarly, this research method requires experienced researchers to obtain targeted data from a group of respondents, and different conclusions can be derived based from the same information, depending upon the personal characteristics of the researcher (Maxwell, 2005).

Chapter IV

FINDINGS

Participant Backgrounds

A review of the study participants indicated a sample of 100 students with disabilities across the academic years from 2007-08 through 2009-10 who had received an initial prescreening health assessment to determine their readiness to engage in driver's education. The review also indicated the ineligibility of students who did not meet the study criteria or were not appropriate for the assessment. The assessment was conducted to determine the readiness of the sample, their motivation, and self-efficacy in terms of engaging in driver's education; 58 of the students were found appropriate for inclusion in the program. Those excluded from the study totaled 60% ($n = 35$) and did not participate due to their disability classification; 7% ($n = 4$) had transferred out of the study-site school, and 5% ($n = 3$) did not meet age requirements. Table 4.1 presents the various types of disabilities among the study sample in this current research. Of the total sample ($N = 58$), over 82% ($n = 48$) presented with MDs, 2% ($n = 1$) with MDs and OI, 5% ($n = 3$) with cognitive impairment, 2% ($n = 1$) were orthopedically handicapped, 2% ($n = 1$) presented with orthopedic handicaps and cognitive impairment, 5% ($n = 3$) with OI alone, and 2% ($n = 1$) with a speech/language disorder.

The population sample in this study was composed of more than 60% males ($n = 37, 64\%$), and females comprised just over 35% ($n = 21, 36\%$). The students ranged from 14 to 29 years of age. The education levels of the 58 students participating in the

Table 4.1

Classification of Disabilities Presented by the Population Sample

Classification	Total number of students	Percentage of sample
Multiple disabilities	48	82
Multiple disabilities/Orthopedic impairment	1	2
Cognitive impairment - moderate	3	5
Orthopedically handicapped	1	2
Orthopedically handicapped/Cognitive impairment	1	2
Orthopedic impairment	3	5
Speech/Language impairment	1	2

study (i.e., 37 males and 21 females) were 31% ($n = 18$) with a high-school certificate of completion (i.e., 10 males and 8 females) and 69% ($n = 40$) were nongraduates of high school attending the Great School. All of the students have been enrolled at the school and those who graduated did so at the age of 21. Table 4.2 presents the ethnicity of the students—43% ($n = 25$) are Hispanic, 38% ($n = 22$) are African Americans, 10% ($n = 6$) are European American/Non-Hispanic, 7% ($n = 4$) are Asian, and 2% ($n = 1$) are Asian/Pacific Islanders. Table 4.3 presents the parental source of income. Out of 58 parents, 25 (43%) were employed, 3% ($n = 2$) were receiving a form of public assistance, 19% ($n = 11$) were receiving social-security insurance, 2% ($n = 1$) were receiving social-security disability insurance, and 33% ($n = 19$) did not respond to this survey query.

Table 4.2

Ethnicity of the Student Population

Ethnicity	Number of students	Percentage of sample
Hispanic	25	43
African American/Non-Hispanic	22	38
European American/Non-Hispanic	6	10
Asian	4	7
Asian/Pacific Islander	1	2

Table 4.3

Parental Financial Sources

Financial source	Number of parents	Percentage of total sample
Employed	25	43
Public assistance	2	3
Social-security insurance	11	19
Social-security disability insurance	1	2
No response	19	33

Meaning of Driving to Life

An initial prescreening health assessment was conducted to determine participant readiness to engage in driver's education and all 58 of the study sample were found to be eligible for the full health assessment. A majority of these students view the ability to drive as beneficial to their quality of life. They provided many reasons ranging from independence to freedom to travel. During the interview when asked, "How will being able to drive affect your life?" the students described the ability to drive to desired destinations without relying upon family members to provide transportation. They also responded with the benefit of mobility when mobility was desired. One student explained that he was not pleased with public transportation because he felt uncomfortable when taking more time than a regular passenger to board a bus. He was strongly adverse to other passengers staring at him and feeling sorry for him. This student used a walker and was classified with MD due to OI and moderate cognitive impairment.

Another question presented for student rating on the study instrument asked, "What would be the impact of not being able to drive?" One interviewee responded, "Being able to drive, [I will be able] to 'hang out' and meet up with my friends at the malls and parties and participate in school activities without worrying about being able to be pick-up [*sic*] by family members or [needing] to get a ride." This student has OI and a speech/language disorder and was classified as MD. The interviewees also stressed the need to drive for employment reasons. For example, one student stated that having the opportunity to drive meant that he "will be able to have the opportunity to locate and obtain a job and be part of the community."

The study participants expressed the limitations to activities of daily life when not able to drive. One interviewee stated, “As I get older, I know I will have more responsibilities and I need to be able to [drive].” This student did not wish to depend upon her mother for transportation needs. She went on to say, “I want to have a family of my own someday and [driving] will be a necessity for me.” She was very concerned with adding responsibilities to her family members and depending on them for transportation. She uses a wheelchair but maintains her independence by transitioning in and out of vehicles without assistance. She was classified as orthopedically handicapped.

Another issue addressed in the study interviews was taking control of life through the ability to drive. One respondent stated, “I want to get around by myself by [driving] without depending on if public transportation would be able to get me there on time.” She also discussed issues related to time management with public transportation.

The interviews also motivated discussion regarding expanding community outreach and networking with government services through the ability to drive. One interviewee stated that, by driving, she “would be able to make several appointments at reasonable times.” This student was forced to make very early doctor appointments, enabling her father to take her. She was classified with OI and utilized a wheelchair for mobility.

Perceptions Surrounding Learning to Drive

Student responses to the interview questions regarding learning to drive were pivotal to this study. The entire study sample sought the opportunity to participate in a driver’s-education course at the school. The students expressed consistent enthusiasm from the beginning process of taking the exam for a driving permit through ultimately

practicing behind the wheel. The prospect of driving was their primary focus and when asked during the group session, “Would you be nervous or hesitate?” the majority of the students stated, “Not at all.” Others stated cautiously, “Just have to wait and see.” These reactions would likely have paralleled those of students without disabilities.

The steps toward obtaining a driving permit were discussed in the study interviews. Learning from the driving manual and studying the questions were areas of focus. Some of the participating students had been classified with a cognitive impairment but demonstrated the ability to follow this discussion. The students were informed that the exam to obtain a driving permit is a multiple-choice test and can be taken by computer or in a written format. When asked about their understanding and comprehension of the material, mixed responses were received. One participant revealed, “I would need a tutor to assist me in some of the study work because I do have problems placing things together.” Another student responded, “I would need more time in regards to taking the exam because I usually go over the information a few times before I respond.” Some of the students asked questions such as, “Would breaks be given if I get tired taking the exam?” They were told that, in some cases, breaks were given.

When the interviews turned to discussion of actual behind-the-wheel driving, the students expressed their apprehension. Several described feelings of nervousness and explained “that anything could happen on the road.” One student stated, “It is a different feeling being behind the wheel than being a passenger.” When asked about their preference as to who teaches them behind the wheel, the response was a family member (i.e., parent, sister, brother, or aunt) or a driving instructor with a disability. A male interviewee with MD explained, “If I had a female instructor with a disability, she would

be more patient with me and understand my feelings.” Another respondent expressed, “My mother knows how I am and I would feel more comfortable if she would teach me [how to drive].” A female student with MD stated, “My brother is great and he has lots of patience with me. He would be great to teach me how to drive.” Another participant responded, “I would not mind if an instructor taught me, as long as he/she understands about my disability [MD/OI].”

During high-school driver’s education, two to three students are typically in a car to practice driving. When participants in this study were asked how they would feel about other students in the vehicle, one respondent expressed, “I would be worried about driving because I would not know if the equipment would work for me.” Several other students expressed uneasiness and nervousness about the concept of shared behind-the-wheel learning. One male MD student who uses a wheelchair stated, “I would have to see the vehicle to make sure it was big enough.” Some students felt that they would be distracted with other students in the vehicle and spoke of safety issues; however, others responded, “I would not mind if other students were in the vehicle . . . ‘specially if it were my friends,” and “I don’t mind if they are disabled or nondisabled students with me because I am there to learn how to drive. I don’t mind the difference at all.” A male student with MD explained, “I would not like it if I could not be able to take driver education at school. I just want to be with my friends and everyone else.” Several students communicated the same desires. A female MD respondent stated, “I do not want to be in the ‘special’ category. I just want to do it regular like other students.”

Driving Accommodations

In the junior year of secondary school, driver's education is included in the curriculum of New Jersey public schools. Course proficiencies are outlined, which involve positive attitudes, the development of skills, and safety habits essential to driving. The procedures of operating a motor vehicle are taught via several classroom scenarios also familiarizing students with laws. Basic car controls and maneuvers are described. In order for students to be certified to learn how to drive, they must complete a combination of classroom instruction time, behind-the-wheel instruction, and in-car observation. Students must also pass written, computer, and oral exams.

A majority of the students participating in this study expressed a preference to learn how to drive in a school setting or other structured environment that would accommodate their special needs. For example, students with disabilities have a difficult time accessing driver's education. Depending upon the classification, a student with spastic diplegic cerebral palsy would need special equipment (i.e., hand-control devices, communication systems, and/or wheelchair assistance) to facilitate the learning process. Students with a learning, cognition, and/or brain impairment would require a more focused and comprehensive structure for learning and retaining information.

Due to the many different types of disabilities addressed in this study, a variety of support devices and driving accommodations were examined. The type and significance of disability determines which students would benefit from the specialized, intensive driving training and which students would be appropriate for high-school driver's education. According to Olmsted-Hickey (2014),

When a medical condition limits visual, physical, sensory, and/or cognitive function as it relates to the task of driving, having the instruction of a trained

Certified Driver Rehabilitation Specialist (CDRS) professional is required to provide the optimal outcomes to create a successful, independent driver. What a CDRS offers over regular driving instruction is specific training, experience and understanding when it comes to both physical and “invisible” special needs (such as learning disabilities, dyslexia, and high-functioning autism). Based on these assessments, your driver rehabilitation specialist may recommend one of the following: new driver behind-the-wheel training, with or without adaptive equipment, behind-the-wheel training with adaptive equipment for experienced drivers, reviewing and re-establishing [*sic*] driving skills for experienced drivers or alternative transportation options to discuss with you and your family. (pp. 1–2)

Conclusion

McGill and Vogtle (2001) advanced that students with milder disabilities should be included in regular driver’s education. Severe physical disabilities or accompanying cognitive disabilities indicate the need for a thorough predriving evaluation to determine driving potential. Due to the specialized nature of such assessments, school systems must refer students to facilities trained to perform such evaluations. The severity and type of disability will partially determine the appropriate nature of student enrollment in high-school driver’s education and which students will benefit from the specialized, intensive driving training offered through external organizations. The majority of students with mild to moderate physical disabilities require only specialized hand controls, rendering them likely candidates for drivers’s education.

School systems must attain the necessary adaptive equipment to offer driver’s education to disabled students, ensuring that driving instructors are prepared to educate students on its proper use. Many programs have driver instructors with knowledge of a variety of disabilities and hands-on experience using adaptive equipment. As a cost-effective measure, several school systems can consolidate adaptive driving equipment to

be loaned out as needed. Adaptive-equipment companies or automobile dealerships might also donate the necessary equipment. Another alternative would be to have financially able parents purchase the adaptive driving equipment needed by their child to ensure its consistent availability.

According to Wehman (1997),

Parent education is needed to alter misconceptions about life options for children with physical disabilities. Because professionals and family members often tell parents their children will never be able to develop skills for independent living . . . parents often have low expectations. (p. 590)

Equipped with proper information, parents can help school systems better prepare their children for life within mainstream society. Programs are available to prepare parents for annual IEP meetings where issues such as scheduling driver's education, predriving assessment, and adaptive driving equipment are discussed. Those concerned about safety must ensure the predriving evaluation is included within the IEP for their child. Another issue raised in this current study was student anxiety regarding driving instructors. This may be one significant factor in the successful completion of driving training. Such anxiety can be reduced or eliminated through the introduction of students to driver's-education teachers prior to driving instruction.

Four study groups were interviewed at various times of day and were composed of students at different ages and with different disabilities. The initial prescreening health assessment determined their readiness to engage in driver's education and indicated the ineligibility of students who did not meet the study criteria or were not appropriate for the assessment. The findings presented in Table 4.1 indicate that 82% of the students participating in this study lived with multiple disabilities. Table 4.2 indicates that 43% of

the students with disabilities were Hispanic in ethnicity. Table 4.3 shows that 43% of the parents of participating students with disabilities were employed.

Chapter V

DISCUSSION

The purpose of this study was to evaluate the role adjustment of school health educators conducting individualized health assessments to determine the readiness, motivation, and self-efficacy of disabled students with disabilities in terms of participating in driver's education, as well as the perceived benefits and barriers. Specifically, this research sought to identify the specific variables (i.e., type of disability, age, ethnicity, location, and parental resources) that correlated with an in-depth analysis within the study-site school. Participants were selected following an initial prescreening health assessment to determine their readiness to engage in driver's education. The screening also indicated the ineligibility of students who did not meet the study criteria or were otherwise not appropriate for the assessment. The data-collection instrument was developed by me, as the researcher, and I also administered the tool.

The Great School has historically educated children with disabilities 3 to 21 years of age, empowering them to become contributing and productive members of society. For over 80 years, the school has provided comprehensive programs to promote meaningful, educational, therapeutic, and social experiences to encourage students to mature to their highest potential. A driver's-education program for students with disabilities attending the university would present great benefit to this student population. As noted earlier, fewer students with disabilities are able to obtain a license than their peers without disabilities (Vogtle et al., 2000). Students participating in this study noted

that the sense of independence, self-esteem, and employment opportunities that driving would bring equates to a higher quality of life.

Major Findings

Disability Classification

The findings from this study were drawn from the participation of 58 students across the academic years from 2007-08 through 2009-10. The students attended the Great School either currently at the time of the study or had previously graduated from the school. The data-collection instrument was a survey and focus-group interviews were conducted. As the researcher in this qualitative study, I was able to notate unique information pertaining to each student. The instrument served as a checklist for obtaining disability statistics and personal experiences from the participating students. The following research questions guided this study:

1. What are the perceptions of students with disabilities regarding the potential role of driving in the improvement of their overall well-being and quality of life?
2. How do disabled students perceive the opportunity to participate in driver's education to obtain their driver's permit?
3. How do disabled students perceive their readiness, motivation, and self-efficacy to participate in driver's education?
4. How do disabled students perceive the benefits and barriers involved in driver's-education participation?

5. How do disabled participants perceive the need for individually tailored accommodations?
6. Do disabled students perceive the goal of driving as appropriate and accessible?
7. What are the implications and recommendations within school, local/state, and national policy with regard to students with disabilities learning to drive?

Participants

Demographics. The analysis of the study-survey responses yielded interesting and noteworthy patterns. Among the 58 participants, 48 (82%) were found to have MDs, which according to Knoblauch (1998), are defined as a combination of impairments, but this does not include deafness and/or blindness. Cognitive, movement, and sensory types of disabilities can affect learning and functioning. Three (5%) students of the study sample lived with cognitive impairment, which according to Every Day Health (2014), occurs when a problem with perceiving, thinking, or remembering is present. Another three students (5%) lived with OI, which is also referred to as a MSD. According to Cote et al. (2013), injuries or pain in body joints; ligaments; muscles; nerves; tendons; and structures that support the limbs, neck, and back manifest with this impairment. One student (2%) presented with MDs/OI, one (2%) is orthopedically handicapped, one (2%) lives with an orthopedic handicap impairment/cognitive impairment, and one student (2%) presented with a speech/language impairment, which Batshaw (2002) described as difficulty in the articulation of words.

The findings of the 2000 decennial census indicated that approximately 49.5 million (19%) of all noninstitutionalized U.S. residents aged 5 years or older live with a

disability (National Center for Health Statistics, 2002). Disability prevalence among children under 5 years of age is approximately 3%. McGill and Vogtle (2001) found a significant relationship between disability type and the ability to drive, which can have a significant impact on self-esteem, motivation, occupation, and overall quality of life. Considine (2015) identified physical challenges for disabled individuals desiring to drive that would require vehicles fitted with adaptive equipment such as, knobs, buttons, and/or pedals to render driving possible.

Feelings and perceptions. Analysis of the group-interview responses also indicated that students with disabilities view the ability to drive as beneficial to their way of life. The benefits ranged from overall independence to the freedom to travel whenever needed. Several of the study participants looked forward to obtaining employment and living on their own. They were aware of the “long road” ahead and the difficulties they could face; however, they looked forward to the possibility of reaching their goals.

As noted earlier, the entire study sample sought the opportunity to participate in a driver’s education course at their school. They expressed consistent enthusiasm from the beginning process of taking the exam for a driving permit through ultimately practicing behind the wheel. Learning from the driving manual and studying the questions were areas of focus. Some of the participating students had been classified with a cognitive impairment but demonstrated the ability to follow this discussion. When the interviews turned to discussion surrounding actual behind-the-wheel driving, the students expressed apprehension. Several described feelings of nervousness and indecision.

Researchers have noted that students with disabilities have a difficult time accessing driver’s education (McGill & Vogtle, 2001). Depending upon the

classification, a student with spastic diplegic cerebral palsy would need special equipment (i.e., hand-control devices, communication systems, and/or wheelchair assistance) to facilitate the learning process. Students with a learning, cognition, and/or brain impairment would require a more focused and comprehensive structure for learning and retaining information.

Perceived benefits and barriers. Analysis of the data collected in this study indicated several benefits of driving for the student population in this study, ranging from independence to the freedom of travel; whenever and however was key. Several are looking forward to obtaining employment, as well as living on their own. Galski, Ehle, and Williams (1997) indicated that mobility limitations cause significant problems in the location and sustenance of competitive employment and engagement in leisure activities for students with disabilities. Kokkonen, Saukkonen, Timonen, Serlo, and Kinnunen (1991) reported that the social isolation of individuals with disabilities has been well documented in studies supporting the finding that limited transportation prevents this segment of the U.S. population from entering mainstream society. The results of this current study support this finding. Participating students did not want to be isolated and viewed as different from their peers; they wanted driving privileges. Olmsted-Hickey (2014) reported that, when a medical condition limits visual, physical, sensory, and/or cognitive function, as it relates to the task of driving, the instruction of a Certified Driver's Rehabilitation Specialist is required to achieve optimal outcomes and successful, independent drivers.

Considine (2015) suggested that a major adolescent milestone is gaining the right to obtain a driver's license and far fewer students with disabilities, compared to their

nondisabled peers, are able to reach this goal. This current study did not find any of the demographic characteristics analyzed to be a factor in relation to successful outcomes following efforts to obtain a driver's license (Considine, 2015; Vogtle et al., 2000). A driver's-education program within Great School would definitely begin with an assessment of student ability to participate and determination of which students would benefit the most from such a program. New Jersey policy on driver's education advances that, once an individual completes all courses and receives certification for driver's education, that individual can teach the course. However, as noted earlier, when a medical condition limits visual, physical, sensory, and/or cognitive function, as it relates to the task of driving, instruction delivered by a trained Certified Driver Rehabilitation Specialist professional is required to provide optimal outcomes (i.e., successful, independent drivers; Olmsted-Hickey, 2014). None of the participants in this study held a driver's permit.

Implications and Limitations

Although students with disabilities are included in general-education classes within high schools, because of the ADA of 1990 and IDEA of 1997, they do not appear to be included in driver's-education classes. Students with disabilities would have the opportunity to engage in richer social lives by increasing their mobility and would have greater responsibility and independence with the ability to drive. Furthermore, social participation would expand lifestyle options and potentially increase the quality of life for this student population.

Greater inclusion of students with disabilities in driver's-education is a legal requirement of Section 504 of the Rehabilitation Act of 1973 and the IDEA (McGill & Vogtle, 2001). Section 504 of the Rehabilitation Act of 1973 protects students with disabilities in programs receiving federal funding, including public school systems, and against discrimination on the basis of disability. Additionally, the IDEA requires that students with disabilities be provided a free appropriate education and related services, as well as education along with students who are not disabled to the maximum extent possible.

The employment rate within the United States for individuals with disabilities 21 to 64 years of age is 33.4% compared to 75.6% for those without disabilities within the same age-group, introducing a 42.2% gap (Erickson et al., 2013). The benefits of driving significantly increase independence for individuals with disabilities by supporting outgoing lifestyles, participation in community activities, use of cultural and recreation outlets, and generally enhancing quality of life. Although the benefits are extensive, fewer students with disabilities obtain driver's licenses compared to their same-age peers. Vogtle et al. (2000) found that 88% of typical teens had their driver's licenses compared to only 46% of students with disabilities.

Recommendations

Many of the reports and survey results of research reviewed for this current study indicated the importance of driving for individuals with disabilities; however, very few studies have focused on the issue of teaching driver's education within the public school system for this student population. Vogtle et al. (2000) reported that the topic of a

driver's-education program at school is an issue that has concerned many faculty members, as well as students. Because no driver's-education curriculum guide currently exists to provide information unique to students with disabilities, this student population is left with finding alternate avenues. According to Kozak (2012),

When in a driver education program, all students are learning and obtaining valuable information and illustrations to become more comfortable, confident, and self-insured [*sic*] so that they could [*sic*] perform behind the wheel. When they work to overcome learning difficulties, physical disabilities or fear in an effort to become skilled drivers, they know they're functioning at a higher level. (p. 19)

Many different types of adaptive driving equipment can be utilized for disabled students to support driver training and related specialized strategies (see Appendix D). Depending upon the student, he or she may have physical limitations requiring evaluation for rapid mobility and with sufficient range to drive safely (Moore, 2009). Students with physical disabilities might be able to utilize adapted equipment such as spinner knobs, hand and brake accelerators, and adapted mirrors. For students experiencing hearing loss or learning disabilities, strategies can involve the study of a driver's-assessment booklet that outlines road signs and their names, different types of behind-the-wheel maneuvers, and practice test questions. Students with low vision will need to obtain special mirrors to compensate for difficulties with visual perception and acuity. Different types of glasses, or an attachment to current glasses, may be required to improve vision.

The education of parents is another factor to consider regarding misconceptions surrounding life options for children with disabilities. According to Wehman (1997), because professionals and family members often tell parents their children will never be able to develop skills for independent living, parents frequently have low expectations. Having accurate and current information will allow parents to better assist school systems

in the preparation of their children for productive and self-satisfying lives within their communities. Programs and school officials are available to assist parents during IEP meetings where driver's education, safety laws, and adaptive equipment can be discussed. Driving instructors could investigate school policies and regulations related to the assessment of students with disabilities for inclusion in driver's-education programs.

Analysis of the data collected in this study suggested that a driver's-education program for the students with disabilities attending the Great School would benefit the students by determining the possibility of driving in their futures. According to Considine (2015), a Certified Driver Rehabilitation Specialist has specific training, experience, and understanding when it comes to both physical and "invisible" special needs. The data presented in this current study suggest that the type of assessment described had not been previously conducted. To institute an assessment of this kind, the school health educator must receive permission from several boards and departmental personnel, as well as obtain parental permission. Regarding New Jersey state policy on driver's education, it is noted that, once an individual completes courses and receives a teacher's certification for driver's education, the individual can teach the course. However, when a medical condition limits the visual, physical, sensory, and/or cognitive function of a student, as it relates to the task of driving, instruction by a trained Certified Driver Rehabilitation Specialist professional is required for outcomes creating a successful, independent driver (Olmsted-Hickey, 2014).

Conclusion

As noted earlier, the U.S. DOT, BTS (2016) estimated that, with over 8.6 million miles of roads and highways across the country, driving is a profoundly deep-rooted activity in American culture. Teens look forward to their 16th birthday and the opportunity to obtain a driver's license. However, for those with disabilities, the adaptations needed to get behind the wheel, as well as the decision to drive at all, can be quite complex (Considine, 2015). Driving can have a significant impact on self-esteem, motivation, occupation, and quality of life, but for students with disabilities, consideration has not been given to driving programs within secondary schools (McGill & Vogtle, 2001). Such exclusions force this student population to seek alternative driving programs outside the school, which can be expensive and difficult to access.

The physical challenges related to disability are often the easiest to address. A disabled individual may have a vehicle fitted with adaptive equipment, such as knobs, buttons, and pedals, to make it physically possible to drive, but the largest obstacle is often the visual-processing aspect of driving (Considine, 2015). Considine (2015) explained that individuals with undistinguishable disabilities have the opportunity to participate in a standard driver's-education program; however, upon attempting the road component, feelings of apprehension and lack of preparation often emerge. She stated,

Disabled individuals who are blind and who experience processing disorders, including Asperger [*sic*] syndrome (a developmental disorder related to autism and characterized by higher than average intellectual ability coupled with impaired social skills and restrictive, repetitive patterns of interest and activities), high functioning Autism (HFA) a term applied to people with autism who are deemed to be cognitively "higher functioning" (with an IQ of greater than 70) than other people with autism) [*sic*], Attention Deficit Hyperactivity Disorder (ADHD) (any of a range of behavioral disorders occurring primarily in children, including such symptoms as poor concentration, hyperactivity, and impulsivity)

[sic] and learning disabilities (a condition [sic] giving rise to difficulties in acquiring knowledge and skills to the level expected of those of the same age, especially when not associated with a physical handicap) simply will not be able to develop the ability to safely [sic] drive a car on their own. (p. 17)

Erickson et al. (2013) reported that the 2011 U.S. Census Bureau's American Community Survey Public Use Microdata Sample found an estimated 12.1%—plus or minus .05 percentage points—of noninstitutionalized males or females of all ages and all races, regardless of ethnicity and at all education levels within the United States, live with a disability. Consequently, more than 3 million individuals within the United States, weighted to a total population of 308 million, are disabled. This includes people living within noninstitutional group quarters such as dormitories and group homes.

In this current research how students with disabilities perceive driver's education and the process of learning how to drive was critically analyzed. Participants were recruited from a school setting. The findings indicate that students with disabilities view the ability to drive as providing independence, freedom, and added responsibility to their lives, as well as increased educational, employment, and recreational choices. The majority of the participating students communicated their preference to be included in a high-school driver's-education program; however, their personal experiences revealed that enrollment has not been offered as an option.

Students with disabilities may encounter many barriers hindering their mobility and forcing them to depend upon others for transportation. Requirements introduced by the ADA (1990) resulted in public transportation systems attempting to implement changes to roads, public facilities, and vehicles. However, several transit divisions within the public-transportation arena are experiencing funding issues and an inability to provide needed assistance. This significantly limits individuals with disabilities desiring to

participate in social or employment opportunities (Wehman et al., 1999). Of 1,000 individuals with disabilities responding to a survey conducted by the International Center for the Disabled (1986), 59% reported a lack of accessible public transportation, limiting their mobility. This finding was supported by other studies (Crewe & Clarke, 1996; Haslegrave, 1991; Taylor, Kagay, & Leichenko, 1986).

Mobility limitations cause significant problems in the location and sustenance of competitive employment and engagement in leisure activities (Galski et al., 1997; Haslegrave, 1991; Nemeth & Del Rogers, 1981). The social isolation of individuals with disabilities has been well documented in studies supporting the finding that limited transportation prevents this segment of the U.S. population from entering mainstream society (Kokkonen et al., 1991; Thomas, Bax, & Smyth, 1988). Due to all the ratifications dealing with public transportation for the disabled, it would be advisable for those with disabilities to obtain a driver's license whenever possible.

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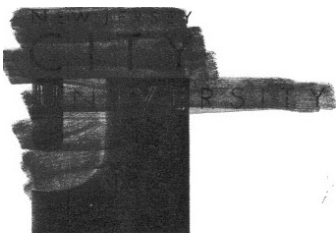
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Appendix A
Approval Letters

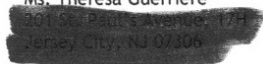


Office of the Vice President
for Academic Affairs



March 23, 2007

Ms. Theresa Guerriere



Re: Request for Exemption Status for Student Research Project Entitled: *Drivers Education for Students With Multiple Disabilities*

Dear Ms. Guerriere:

[Redacted] Institutional Review Board [Redacted] IRB) is in receipt of your application for review of research for exemption status under the [Redacted] IRB's *Procedures and Guidelines for Researchers for the Protection of Human Participants*. On behalf of the [Redacted] IRB, thank you for submitting the materials to my attention as chairperson. As the IRB Procedures and Guidelines indicate, certain educational research involving human subjects may be exempt from full IRB review but still necessitate IRB approval according to an expedited basis (pps. 7-9, [Redacted] Procedures and Guidelines).

As chairperson for the [Redacted] IRB, I am pleased to inform you that the Board has approved your request for exemption under the guidelines for expedited review. Attached is your copy of the **Notice of Exemption** granting you [Redacted] IRB approval of your research project under **categories 1 & 3** of CFR 46.101(b).

The above decision is based on the materials submitted by you to the [Redacted] IRB and upon the understanding that those materials represent a complete and accurate account on how human subjects are involved and protected in your study. It is also understood that you will conduct your research according to the procedures described in those materials and that you will report to the [Redacted] IRB any changes in your procedures that would necessitate an IRB review, expedited or otherwise.

On behalf of the [Redacted] IRB, I wish you success with your research project and trust that the research experience will be a productive one for you and your participants. If you should have any additional questions or if your proposal should change, please do not hesitate to contact my office at [Redacted].

Sincerely yours,

Ph.D.

Chairperson, [Redacted] City University Institutional Review Board

HP/ea

Enclosure
c: IRB Review Committee



Revised 6/009

Institutional Review Board [Redacted]

Last Name Guerriere

Access No. _____

NOTICE OF EXEMPTION FROM IRB REVIEW

The project identified below has been declared exempt from review by the IRB under the provision of Federal Regulations 45 CFR 46. Your Research is exempt under **category 1 & 3.**

This exemption is based on the following assumptions:

1. that the materials you submitted to the [Redacted] IRB provide a complete and accurate account of how human subjects are involved in your project.
2. that you will carry on your research according to the procedures described in those materials.
3. that you will report to IRB any changes in your procedures that would remove the project from the exempt category and make it subject to IRB review.
4. that if such changes are made, you will submit the project for IRB review.
5. that you will immediately report to the IRB any problems that you encounter while using human subjects.

Name of Chief Investigator: Theresa Guerriere

Co-Principal Investigator:

Title of Project: Drivers Education for Students with Multiple Disabilities

Conditions: None

Note: For Categories 2 & 3 A consent form is not needed for subjects asked to complete an anonymous questionnaire.

Signed [Signature]
Chair, [Redacted] Institutional Review Board

3/22/07
Date

[Redacted]
Office of Academic Affairs

Last Name: Guerriere

Access No.: _____

TEACHERS COLLEGE

Theresa Guerriere

Curt Naser, TC IRB Coordinator

IRB Approval: 17-116 Protocol

12/14/2016

Thank you for submitting your study entitled, "*Results of Health Assessments of Disabled Students to Determine Readiness to Participate in Driver's Education: Implications for Providing Access to Driver Education for Disabled Students*;" the IRB has determined that your study is **Exempt** from committee review (Category 4) on 12/14/2016.

Please keep in mind that the IRB Committee must be contacted if there are any changes to your research protocol. The number assigned to your protocol is **17-116**. Feel free to contact the IRB Office by using the "Messages" option in the electronic Mentor IRB system if you have any questions about this protocol.

You can retrieve a PDF copy of this approval letter from the Mentor site.

Best wishes for your research work.

Sincerely,

Curt Naser, Ph.D.

TC IRB Coordinator

curto@axiom-educator.com

Appendix B

Data-Collection Instrument

Name _____

- 1) Date of Birth: ___/___/___ Age _____
- 2) Date of Entry: ___/___/___
- 3) Date of Closure: ___/___/___ Grad _____ Other _____
- 4) Gender: Male _____ Female _____
- 5) Race:
 ___ White-Non Hispanic Origin
 ___ Black-Non Hispanic Origin
 ___ Hispanic
 ___ Other (Specify) _____
- 6) Driver's Permit:
 ___ Yes ___ No
- 7) Disability (MD)

- 8) Source of Family Income: (Check the primary source of income)
 ___ Parents Employed ___ Public Assistance ___ SSDI ___ SSI

Student Disabilities

Given this disability/set of disabilities, I rate this student's prospects of every driving independently as:

__1 Very poor chance, or very unlikely/unrealistic chance of ever driving independently, as this is physically/psychologically/cognitively just not feasible at all

__2 Poor chance, or mostly unlikely/unrealistic chance of ever driving independently, as this is physically/psychologically/cognitively not very feasible

__3 Fair chance, or somewhat unlikely/unrealistic (e.g. with adaptive device, etc.), as this is physically/psychologically/cognitively only somewhat feasible

__4 Good chance, or good level of likelihood/realistic chance of every driving independently (e.g. with adaptive device, etc.), as this is physically/psychologically/cognitively feasible at a good level

__5 Very good chance, or very good level of likelihood/realistic chance of every driving independently (e.g. with adaptive device, etc.), as this is physically/psychologically/cognitively feasible at a very good level

__6 Excellent chance, or excellent level of likelihood/realistic chance of every driving independently (e.g. with adaptive device, etc.), as this is physically/psychologically/cognitively feasible at an excellent level

Appendix C

Interview Protocol

- 1) Would you want a driver's education course in the school? When do you want it? Who do you want to teach it?
- 2) Would they want to be included in the community as drivers? And, if yes, how so?
- 3) How would being able to drive affect your life?
- 4) What would be the impact of not being able to drive?
- 5) What are your feelings about the driving process? What are some of the negatives and positives for you when it comes to the possibility of driving?
- 6) What do you perceive to be your parents' feelings about your possibly driving?
- 7) If you attended another school, did they provide driver's education?
- 8) What are your feelings and opinions about the Great School not having a driver's education program?
- 9) Through which entity do you prefer receiving assistance in obtaining your driver's permit--whether receiving that assistance from the Great School, or a private organization (e.g. a driver's training school for the disabled, going straight to New Jersey Motor Vehicles)?
- 10) Why do you want to learn how to drive?
- 11) What preference did they express for a driving instructor when given the options of a family member, a coach from a driver's training school for the disabled, or a friend?
- 12) What preference did they express for where they would go to drive when given the options of a driver's training school for the disabled, or going straight to New Jersey Motor Vehicles?
- 13) How much money would you and/or your family be able and willing to pay for driving lessons?
- 14) With regard to the choice of learning how to drive, would you prefer learning in a car or a truck?
- 15) If the Great School did not assist you in obtaining your driver's permit, would you still attempt to obtain one?

Appendix D

Driving Aids

Different Types of Driving Aids



Mechanical Hand Controls



Spinner Knobs and Electronic Hand Controls



Various Types of Adaptive Equipment for the Disabled Including Available Hand Controls and Other Devices



Steering-Wheel Spinner-Knob Styles



W-Series Orthotics for Steering



Electronic Driving Controls

Acceleration, Braking, and Steering with Sophisticated Electric Drive-By-Wire Systems



J-Series Orthotics - Joystick



L-Series Orthotics - Gas/Brake