Autism, the Least Restrictive Environment, and Special Education Faculty Stress and Burnout

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ABSTRACT

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The prevalence of autism has increased over recent decades. Today, education is the primary intervention for individuals with autism. The ability for students with autism to receive interventions in the classroom comes from the Individuals with Disabilities Education Act (IDEA). This thesis analyzes the education of students with autism through a critical analysis of the IDEA and the least restrictive environment (LRE) provision specifically. In this analysis, I found that several variables play a key role in the implementation of the LRE, including funding, state of residence, and locale of residence. To further understand the implementation of the LRE, I surveyed special education faculty on their stress and burnout, resources, staffing, support, and the number of students not in the LRE in their classroom. I found that resources, staffing, and support all predict the level of stress and burnout in faculty. Most importantly, I found that the more stress and burnout faculty report, the more students they report who are not in the LRE in their classroom. These findings provide insight into the shortcomings of the IDEA.

Keywords: autism, Individuals with Disabilities Education Act, least restrictive environment, special education, stress, burnout

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Autism, the Least Restrictive Environment, and Special Education Faculty Stress and Burnout

The prevalence of autism spectrum disorder (ASD) has increased dramatically over recent decades, making it critical to understand the interventions being used for individuals with autism and how well they are being implemented. Today, due to the creation and implementation of the Individuals with Disabilities Education Act (IDEA), education is the primary form of intervention for individuals with autism. The IDEA creates many protections for students with disabilities including the right to a free and appropriate public education (FAPE) in the least restrictive environment (LRE) possible. To assess the implementation and the practical implications of the IDEA, I conducted a critical analysis of the IDEA and its LRE clause, by looking at their implementation over time and across states. I then examined the condition of special education in New York state specifically through an analysis of state-specific special education policy, funding, and LRE implementation. To further this analysis, I conducted a survey of special education faculty in rural New York to assess their stress and burnout, resources, staffing, support, and LRE practices for students with autism. Through these original elements, I drew conclusions about factors in schools that may influence faculty stress and burnout, the factors influencing the implementation of the IDEA, and the potential limitations of the IDEA as a whole.

Autism Spectrum Disorder

As defined by the National Institute of Mental Health, autism can be defined as a "neurological and developmental disorder that affects how individuals interact with others, communicate, learn, and behave" (NIMH, 2023). The word autism stems from the Greek word self, as a way to describe social isolation (McDougle, 2016). This term was first coined by two

psychologists Leo Kanner and Hans Asperger, as the descriptor of children they studied in the 1940's (Murray, 2011; Sicile-Kira, 2004). Some of the fundamental characteristics seen in these children were social isolation, communication deficits, specialized interests or obsessions, and often high intelligence (Murray, 2011). This unique presentation was first considered to be a mental illness that was developed in children of aloof mothers who were cold and detached from their children (Sicile-Kira, 2004). This theory was widely accepted, and thus autism was believed to develop in children of so-called 'refrigerator mothers,' until the 1960's (Sicile-Kira, 2004). In 1964, however, researcher Bernard Rimland produced his groundbreaking neural theory of behavior suggesting that autism is a biological disorder (Murray, 2011; Sicile-Kira, 2004). Rimland went on to found the Autism Society of America and the Autism Research Institute, which were considerable developments for their time, allowing for research funding and networking of researchers and families (Sicile-Kira, 2004). The developments by Rimland were a large improvement in truly understanding, studying, and treating autism, not as a mental illness but rather as a neurodevelopmental disorder.

Autism research continued to grow from its first appearance in the 1940's, however, it was not until the late 1960's that a diagnostic criterion for autism began to be developed (McDougle, 2016). As research on autism grew, there were common themes of social deficit and unusual behavior in those believed to have autism (McDougle, 2016). This eventually led to the formally recognized diagnostic criteria of autism in the late 1980s in the DSM-III (McDougle, 2016). In the DSM-III, autism was placed under the category of Pervasive Developmental Disorders (McDougle, 2016). However, this definition of autism was changed in the following DSM revision. In the DSM-III-R, autism was changed to autistic disorder, which was much more developmentally oriented and less strict than the previous diagnostic criteria (McDougle, 2016).

The presentation of the disorder was split into three domains: qualitative impairment in reciprocal social interaction, communication, and restricted interests (McDougle, 2016). This change in criteria moved much closer to what is seen today. However, the developments in this revision of the DSM strayed far from the ICD-10, the international diagnostic manual, leading researchers to reconsider their criteria again (McDougle, 2016).

In the development of the DSM-IV, researchers indicated a preference to separate those with 'higher functioning autism' by using a new diagnosis termed Asperger's disorder (McDougle, 2016). This diagnosis was termed referencing the sample of children Hans Asperger studied in the 1940s, who differed from the lower-functioning sample of Leo Kanner (McDougle, 2016; Sicile-Kira, 2004). The two categories were combined once again in 2013 when all of the disorders under the category of Pervasive Developmental Disorders were combined into autism spectrum disorder (ASD) in the DSM-5, which is where it stands today (McDougle, 2016).

The current diagnostic criteria of ASD require the presentation of deficits in social-emotional reciprocity, restricted repetitive patterns of behavior, interests, or activities, and the presentation of symptoms in early development, as well as clinically significant impairments in functioning (American Psychiatric Association, 2013). Deficits in social-emotional reciprocity can be manifested by poor verbal or nonverbal communication, lack of eye contact, difficulties sharing, playing, or making friends, failure to initiate or respond to conversation, and other similar items (American Psychiatric Association, 2013). Restricted repetitive interest, behavior, or activities can be seen in the preference to line up toys, repeating phrases, insisting on sameness in routines, food, or behavior, strong attachment to unusual objects, and hyper or hypo reactivity to senses to name a few (American Psychiatric Association, 2013).

The reason behind the development of ASD remains unclear, as do the causes of most disorders. However, much progress has been made in the field to find relationships between biological, genetic, and environmental factors and autism. Several studies have investigated the brains of those with autism which show increased cell-packing density, smaller neuron size in the limbic system, fewer Purjinke cells in the cerebellum, and cortical dysgenesis compared to the brains of those without autism (Palmen et al., 2004). Although it is unclear what such differences in the brain contribute to the development or symptoms of the disorder, these are a basis from which differences may stem.

Furthermore, there is much evidence that ASD is largely genetic. Taylor et al. (2020) found heritability estimates at .93, and heritability for monozygotic twins to be significantly higher than for dizygotic twins. However, Taylor et al. (2020) also found that ASD has increased across birth cohorts, suggesting that factors other than just genetics contribute to the disorder as well. Moreover, across cohorts, the severity of impairment in ASD has increased (Lundstrom, 2021). The increase in ASD prevalence and severity found in present studies suggests that environmental factors likely play a role in the development of ASD (Zieden, 2021; Taylor et al., 2020; Lundstrom, 2021).

The prevalence of ASD has skyrocketed even just in recent decades. In 2000, the prevalence of ASD was one in 150 children (CDC, 2023). However, as of 2020, the prevalence of ASD is just one in 36 children (CDC, 2023). This increase is likely due to a multitude of factors, from the aforementioned genetic, environmental, and even diagnostic criteria changes as well. Nonetheless, it is accepted that the prevalence of ASD has increased, making it critical to understand the interventions that are being used, how well they are implemented, and their outcomes for those with ASD.

Before Rimland's contributions to understanding autism as a neurodevelopmental disorder during the 1960s, the treatment for autism was largely psychoanalysis or psychiatric hospitalization (Sicile-Kira, 2004). However, with the rise of Rimland's neural theory of behavior for autism, treatments turned toward a different approach focused on behavior change (Sicile-Kira, 2004). In the early 1900s, researchers Edward Thorndike and Ivan Pavlov initiated work on behavior change (Fisher, 2021). Thorndike's procedure of behavior change was later adopted by Skinner and termed operant conditioning (Fisher, 2021; Sproatt & Navab, 2013). Operant conditioning relies on the consequences of particular events (Fisher, 2021). Consequences come in the form of positive (adding) or negative (removing) to increase the behavior (reinforcement) or decrease the behavior (punishment) (Fisher, 2021). This form of conditioning is the foundation for applied behavior analysis, which is used to increase socially desirable behavior and decrease problem behavior through reinforcement procedures (Fisher, 2021).

In the 1960s, psychologist Ivar Lovaas began implementing intensive behavior therapy termed applied behavior analysis (ABA) in children with autism (Sicile-Kira, 2004; Lovaas et al., 1965 as cited in Lovaas & Bucher, 1974). His studies showed success, with participants gaining an average of twenty IQ points (Sicile-Kira, 2004). However, his early studies of intensive ABA often utilized electric shock as a form of punishment to reduce negative behaviors (Lovaas et al., 1965 as cited in Lovaas & Bucher, 1974). One study aimed at building social behavior and eliminating problem behaviors in two children with autism by teaching them to avoid shock (Lovaas et al., 1965 as cited in Lovaas & Bucher, 1974). In order to avoid the shock, the children had to approach an adult who was placed in the room. This was done to target the social isolation common in autism. Lovaas (1969) furthered this study to decrease the occurrence

of self-injurious behavior (SIB) which is common to those with autism (as cited in Lovaas & Bucher, 1974). Two children with signs of autism and a high degree of SIBs were placed on a nurse's lap and were administered shock when they began self-injury (Lovaas et al., 1969 as cited in Lovaas & Bucher, 1974). Over the course of the study, SIBs were reduced in the two children (Lovaas et al., 1965 as cited in Lovaas & Bucher, 1974).

The use of shock was one of the first demonstrations of operant conditioning in children with autism, leading to criticisms of Lovaas and ABA (Leaf et al., 2021). Today, however, ABA therapy looks different than in its initial studies. Shock is no longer used as a form of punishment in interventions for those with autism, except at some rare centers (Leaf et al., 2021). Today, ABA is largely implemented in schools. For example, The New England Center for Children developed an ABA-based curriculum called the Autism Curriculum Encyclopedia, or ACE (Fisher, 2021). ACE is a widely used program in special education classrooms, and each curriculum is specialized to the child based on their skills assessments (Fisher, 2021). Students learn new skills by doing the tasks outlined in their curriculum and receiving reinforcement when done correctly, based on operant conditioning (Fisher, 2021).

Another important aspect of ABA in classrooms is the tracking of student behavior. Each student has specified target behavior changes as outlined by their Individualized Education Program (IEP) (Fisher, 2021). Students' IEPs are developed by a team of professionals including their special education teacher, special service personnel, district representative, general education teacher, and the student and parent (The Individuals with Disabilities Education Act, 2015). Teachers and/or classroom paraprofessionals are responsible for collecting data on IEP behaviors (Fisher, 2021). All behaviors follow an antecedent-behavior-consequence (ABC) model which outlines a specified response to a behavior, as follows operant conditioning

(McDougle, 2016). Furthermore, the tracking of antecedents or what may cause a behavior helps to inform the needs of the student such as environmental changes to avoid the triggering of a behavior.

ABA is currently the most common choice of intervention for those with ASD. This is because ABA is highly evidence- and data-based (NRC, 2001). Programs rely on data to inform each individual's intervention plan (Herbert & Brandsma, 2002). Additionally, ABA programs as a whole rest upon decades of research showing that ABA is effective in decreasing problem behaviors and teaching new skills (NRC, 2001). A recent review found that 63-88% of those in ABA interventions showed improvements across various outcomes such as language improvement, cognitive functioning, and adaptive behaviors (Gitimoghaddam et al., 2022). Overall, it is evident that ABA is effective at improving prosocial behavior, decreasing negative behaviors, and creating room for intellectual growth.

The wide basis of evidence behind ABA is one of the reasons it is most often chosen as the intervention for autism in education, as education policy requires evidence-based practices (The Individuals with Disabilities Education Act, 2015; NRC, 2001). However, not all students with autism are educated in ABA classrooms. Venues for educating students with ASD vary from the general education classroom, resource rooms within a school, separate classrooms within a school, or separate schools depending on a student's functioning and support needs (U.S. Department of Education, 2021). Furthermore, for those originally in ABA interventions, following the interventions, students are often able to move into general education classrooms (Sicile-Kira, 2004).

The Individuals with Disabilities Education Act

Although education is the most common intervention for students with autism today, the ability of a student to receive interventions in the classroom was not always guaranteed. It was not until 1975 that the national government created and implemented the Education for All Handicapped Children Act (The Individuals with Disabilities Education Act, 2015). This act ensured a "free and appropriate public education (FAPE) to each child with a disability in every state and locality across the country" (The Individuals with Disabilities Education Act, 2015). Before this act, over one million children were completely excluded from the public school system (The Individuals with Disabilities Education Act, 2015).

The precedent to exclude students with disabilities from public education began as early as 1893 when in *Watson v. City of Cambridge* (1893) the Massachusetts Supreme Court held that students who were "weak in the mind" or disruptive could be excluded from public schools (Yell et al., 1998, p. 220). This practice was continuously upheld in various courts across the United States (Yell et al., 1998). However, the *Brown v. Board of Education of Topeka* (1954) decision that "separate educational facilities are inherently unequal" created a new basis for students with disabilities to seek constitutional protection for education.

The protection of equal educational access for students that was outlined in *Brown* was extended to students with disabilities by being encoded into the Education for All Handicapped Children Act (EHA) two decades later (Palley, 2003). The EHA protected the right of children with disabilities to receive a FAPE and due process protections for students and families to ensure their educational rights were safeguarded (Palley, 2003). The reauthorization of the EHA in 1986 extended its protections for services from children three years and older to children once they were born (The Individuals with Disabilities Education Act, 2015).

Just a few years later, in 1990, the EHA was transformed into the IDEA (The Individuals with Disabilities Education Act, 2015). The initial authorization of the IDEA included the FAPE provision and an additional protection that required an individualized education plan (IEP) for each student (The Individuals with Disabilities Education Act, 2015). The IDEA was amended in 1997 and 2004 as well. In 1997, the right to be educated in the Least Restrictive Environment (LRE) possible was officially included. Today, the IDEA includes a FAPE in the LRE, an IEP for every student, parental and student participation in educational decisions, and procedural protections for these provisions (Lipkin & Okamoto, 2015). The FAPE provision extends the right to publicly funded special education and related services targeted for the individual (Katsiyannis et al., 2001). In accordance, each student is entitled to an IEP which determines the student's needs and services (Katsiyannis et al., 2001). There are procedural protections for this as well, which provide parents the right to participate in the IEP development process and due process hearings if a disagreement on any IDEA provision arises (Katsiyannis et al., 2001). The LRE determines a student's right to be educated with students without disabilities to the maximum extent possible (Katsiyannis et al., 2001). Thus, it is suggested that a student should only be placed in separate classes or schools when necessary (Katsiyannis et al., 2001).

Following the creation of the IDEA, the Department of Education formulated regulations for its implementation (Assistance to States for the Education of Students with Disabilities, 2023). All provisions were defined much more thoroughly in these regulations. A FAPE was defined as education at public expense from preschool to secondary school in alignment with a student's IEP. Education is defined to include related services such as audiology, counseling, occupational therapy, and much more, all free of cost to the family. The IEP must address the student's current achievement and functioning, outline academic and functional goals, measure

progress toward goals, research-based services, the extent of time in general education, accommodations for assessments, and the assessment's time, location, and frequency. The team to develop the IEP must include the parents, general education teacher(s), special education teacher(s), local agency representative, an interpreter for the evaluation data, and the child if appropriate. The regulations define the LRE as access to education with students who are not disabled to the maximum extent possible. It also determines that the removal of a student from the general education classroom can only occur when educational benefits cannot be achieved with supplementary aids and services. The provision which requires the identification and evaluation of all children with disabilities in the area is known as "child find." This is defined to include those who are homeless, mobile, privately educated, or anyone suspected of having a disability. Following identification, the education agency must administer assessments to determine whether a student has a disability, then whether this disability is eligible for services under IDEA. Some disabilities that may not require IDEA protection include diabetes, asthma, and sometimes attention deficit hyperactivity disorder (ADHD). Furthermore, the regulations outline that 15% of funding can go toward early intervention services including professional development and training. Congress also outlines qualifications for special education personnel including state certification and a bachelor's degree for teachers, but only training and supervision are required for assistants or paraprofessionals. Lastly, the procedural safeguards protect parental rights to view education records, participate in IEP meetings, obtain differential evaluations, receive information in their native language, receive notices on their legal rights, and resolve disputes through due process hearings. Thus, all of the general provisions outlined in the IDEA were further defined by these congressional regulations.

Although Congress passed this act and its subsequent regulations, courts have still been fundamental in further defining the IDEA requirements (Palley, 2003). This is due to the relatively ambiguous nature of several IDEA clauses. Thus, the holdings of IDEA cases have provided a more thorough understanding of several provisions and indicate the proper implementation of such. The cases brought to court have involved both procedural and substantive violations of the IDEA varying from personnel quality to services not providing progress and LRE placement (Hill & Kearley, 2013).

Importantly, the Supreme Court has heard and decided a case on the IDEA regarding the FAPE provision specifically. The Court determined that a FAPE was intended to provide an education good enough to achieve educational benefits (Palley, 2003). This suggests that the education guaranteed under the IDEA must simply provide educational benefits. However, even with this, circuit courts have read this decision itself both more and less expansively (Palley, 2003). For example, some courts considered a sufficient education to be passing grade levels, whereas others considered it to be more than the minimum of passing grade levels (Palley, 2003). Thus, there is still variability even in this area where the Court has spoken. Furthermore, the Supreme Court has yet to speak on the lower courts' decisions regarding several of the other IDEA protections, which has left other important definitions and concepts even more ambiguous and variable from state to state and court to court (Palley, 2006; Palley, 2003).

One critical concept of the IDEA is the LRE clause. The LRE clause determines that students with disabilities must be educated with their peers without disabilities to the maximum extent possible (Lipkin & Okamoto, 2015). In general, the most common belief is that the LRE is the general education classroom (Rueda et al., 2000). However, Kavale and Forness (2000) analyze the debate on inclusion, outlining several different interpretations of the LRE from being

a continuum, a belief, or a single place (the general classroom). In general, it can best be understood that placements for students with disabilities occur on a continuum of restriction. The most restrictive placement would be a separate classroom or school, a pullout program is a combination of separate services and time in the general education room, and the least restrictive would be the general education room with time for related service (McLeskey et al., 2010). On the continuum of placements, inclusive programs and mainstreaming represent practices closer to the least restrictive environment. According to the LRE clause, the least restrictive placement (i.e. general education) is the overarching goal for educating students with disabilities, however, the other options on the continuum may be necessary and or sufficient.

Osborne and DiMattia (1994) reviewed the court cases on the LRE clause specifically. Early cases determined that the LRE did in fact reference mainstreaming or inclusive practices (Osborne & DiMattia, 1994). Some of these decisions held that more restrictive environments are appropriate when the general setting will not provide an adequate education, whereas other decisions ruled that socialization is sufficiently important to sacrifice some educational quality (Osborne & DiMattia, 1994). More recently, courts have ruled more favorably for general education access and have provided further guidelines to achieve such. However, some circuits give more priority to this than others (Gordon, 2006). The Fifth Circuit court created an LRE test to determine whether the LRE is achieved (Osborne & DiMattia, 1994; Gordon, 2006). This test has been adopted in several circuits thereafter (Gordon, 2006). The court must first assess whether "education in the general classroom with supplementary aids and services can be achieved satisfactorily," and then if it cannot, the court must assess "whether the school district mainstreamed the student to the maximum extent possible" (Osborne & DiMattia, 1994, p. 8). In accordance with this analysis, courts have ruled more favorably for the least restrictive

placement in recent years, indicating that the initial placement of a student should be in the general classroom with supplementary aids and services, and until this placement proves unworkable, it is to stand (Osborne & DiMattia, 1994). Thus, the courts have been important in determining and assessing how and when school districts have upheld or violated the LRE, which creates the landscape for how school districts make decisions about their implementation of the LRE clause in regard to their students' placements.

Although the addition of the LRE clause stems from a social movement toward equality and inclusion following *Brown*, the literature shows that such inclusion provides significant social and academic benefits for students with disabilities which furthers the movement toward the LRE (Hunt & Goetz, 1997). In a study of over 1300 students with disabilities, the number of hours per week spent in the general education classroom significantly predicted math and reading achievement (Cosier et al., 2013). More specifically, each additional hour spent in the general education classroom predicted a .49-point increase in the reading assessment and a .37-point increase in the mathematics assessment (Cosier et al., 2013). Furthermore, in a study of students with learning disabilities, students in the inclusive programs rather than pullout programs achieved significantly higher grades in art, math, science, and social studies assessments (Rea et al., 2002). Similarly, it was found that for students in less inclusive settings, 62% scored lower than students who were more included in academic and social measures (Oh-Young & Filler, 2015). Additionally, students in inclusive programs attended significantly more days of school than students in other programs (Rea et al., 2022). Thus, research demonstrates how important inclusion is and demonstrates that, on the continuum of placements, inclusion predicts better academic outcomes for students (Rea, et al., 2022; Oh-Young & Filler, 2015; Krämer, 2021; Baker et al., 1995).

Additionally, inclusion has beneficial social outcomes as well (Baker et al., 1995). A review by Hunt and Goetz (1997) outlines several findings on social benefits for students with disabilities from a higher amount of social contact to a higher initiation of interaction and larger friendship networks. The social aspect of inclusion benefits not just students with disabilities but also students without disabilities as well. Students without disabilities benefited from these social interactions and showed no difference in learning or engagement from students in a classroom without a student who has a disability (Hunt & Goetz, 1997). There have also been academic benefits found in students without disabilities in inclusive classrooms (Szumski et al., 2017). Thus, the literature suggests that inclusion is beneficial for students with and without disabilities in social and academic areas.

Importantly, as courts have attested, sometimes it may not be appropriate for a student to be educated in the general classroom. However, education in the general classroom is not the only opportunity for inclusion. Other avenues to promote inclusion and socialization include integrated settings such as cafeterias, computer labs, and libraries, integrated specials like gym, art, or music, or extracurricular activities (Rozalski et al., 2010). All of these are opportunities to promote inclusion and socialization in ways that are not based in instructional learning. This idea was emphasized in the Department of Education regulations following the IDEA reauthorization in 1997, which specified that students unable to be educated in the LRE should be included in these other activities to the maximum extent appropriate. (Diaz, 2014). Thus, even in the cases in which students should not be educated in the general classroom, there are other avenues for which a district can provide less restrictive placements and situations.

In spite of this, the degree to which students with disabilities are included in general education is quite variable (McLeskey et al., 2011). Although the literature, the courts, and

Congress suggest that students should be included to the maximum extent possible, some still contend that many schools do not have the capacity to accommodate this (Hasazi et al., 1994). In a study of knowledgeable personnel on the LRE, ranging from educators, professors, legislatures, and board members, it was suggested that financial means are an underlying factor in the implementation of LRE (Hasazi et al., 1994).

Overall, the education of students with disabilities has come a long way from these students initially being completely excluded from public education to the push toward inclusion in general education classrooms. Courts have been critical in their understanding of Congress' intentions in the IDEA, but the variation among the different district courts has left several provisions ambiguous. Nonetheless, it is widely understood that students benefit from and deserve to be included in the LRE to the maximum extent possible, as suggested in both the amendments and regulations. However, there remains variation across states not only in their understandings of the IDEA but their implementation of such (Palley, 2003; McLeskey et al., 2011). It is important to understand this variation and to identify areas in which the IDEA is not being upheld to the proper extent. The LRE is one critical aspect of the education of students with disabilities for educational and social reasons. Thus, a critical analysis of the LRE clause and its implementation is useful in understanding the quality of the education that students with disabilities receive.

Critical Analysis of the Least Restrictive Environment Clause of the Individuals with Disabilities Education Act

The EHA (later transformed into IDEA) was passed in 1975. In the EHA, the LRE clause was not encoded in the statute. Rather, the LRE clause was included in the federal regulations for its implementation. This arguably reflects that, at the original construction, the LRE was less

important than other provisions like the right to a FAPE (Crockett, 1999). However, the original statute stated specifically that a continuum of placements must be available (Crockett, 1999). Thus, rather than recommending the LRE specifically, it encouraged placements at all levels, from most restrictive to least restrictive.

It follows, then, that from 1976 to 1983, students were moved from less restrictive settings to more restrictive settings (Brock, 2018). For students with intellectual disabilities in particular, education in the general education (GE) classroom decreased nationwide by 7.7% and students in regular schools decreased by 4.5% (Brock, 2018). Although these trends do not follow the current understanding of the goal of IDEA, these changes likely reflect the language used in the original statute itself, which emphasized providing access to a continuum of placements.

The push toward implementing and providing access to the LRE for all students with disabilities was not a significant focus until the 1990s. When the EHA was transformed and renamed the IDEA in 1990, the LRE remained in the federal regulations rather than the statute. Nonetheless, throughout the early 1990s, district courts began deciding in favor of the LRE regulation (Osborne & Dimattia, 1994). This is also when the Fifth Circuit established the aforementioned LRE test, which required a two-part test first showing that with supplementary aids and services, a student cannot be adequately educated in the GE, and only then can a student be moved to a more restrictive setting (Osborne & Dimattia, 1994). This test was adopted by several district courts afterward and became a hallmark for court decisions pushing for the LRE throughout the early 1990s. The push from the courts likely explains, in part, the first major changes in placement rate for students with disabilities. From the 1988/1989 to the 1994/1995 school year, there was a 151% increase in these students being educated in the GE classroom

(McLeskey et al., 1999). Furthermore, pull-out settings decreased by 18% and separate school settings decreased by 31% (McLeskey et al., 1999). Thus, as there was a push for the LRE in court decisions, students were moved to less restrictive settings.

In 1997, the IDEA revision added the LRE to the IDEA statute, reflecting a clear push and preference toward giving all students with disabilities access to the LRE (Smith & Rapport, 1999). The placement rates continue to reflect this change in preference for access to the GE classroom. In McLeskey and colleagues' (2010) comparison of the 1990/1991 and 2007/2008 placement rates for students with all disabilities, they found a 93% increase in general education settings. Furthermore, students educated in separate settings (separate schools and separate classes) declined by about 25% (McLeskey et al., 2010). For students with learning disabilities only, there was a 166% increase in GE placement from the 1990/1991 to the 2007/2008 school year (McLeskey et al., 2011). There was also a decrease in separate settings by 60% (McLeskey et al., 2011). Therefore, the trend toward the LRE continued as the push for access to the LRE persisted, which the 1997 IDEA amendments required.

Looking about a decade later at the 2019 *Data Reports to Congress*, the placement data reflect continuing commitments to the LRE (U.S. Department of Education, 2021). From 2010 to 2019, there was a 4.3% increase in students educated in the GE classroom and a slight decrease in pull-out settings. The number of students in separate settings remained relatively stable. Overall, the commitment to the LRE remains stable nationwide over the last decade. This largely reflects unchanging policy but also a continued commitment toward the LRE.

However, such trends vary when looking specifically at the type of disability a student may have. Students who need extensive and pervasive support see much smaller improvements in LRE access compared to other disabilities (Morningstar & Kurth, 2017). Today, compared to

the national average GE placement of 64.8%, placement for ASD is 39.8% (Dragoo, 2018). For most restrictive placement rates, ASD was followed only by intellectual disability (16.6%), multiple disability (14.3%), and deaf/blind (26.5%) diagnoses, all of which are categorized as extensive and pervasive support disabilities. However, evidence does suggest that placement for autism has trended toward greater GE access than the other extensive and pervasive support categories (Morningstar & Kurth, 2017).

State LRE Implementation

Furthermore, although national trends suggest a commitment toward the LRE, state placement rates vary considerably. McLeskey and Henry (1999) examined the state placement rates in the *Data Reports to Congress* for the 1994/95 school year. The states with both the most restrictive placements and lowest GE placements were New York, New Mexico, Illinois, Florida, Louisiana, South Carolina, Virginia, Mississippi, and the District of Columbia. On the other hand, the states with both the least restrictive placements and most GE placements were Vermont, North Dakota, Oregon, Colorado, Idaho, South Dakota, Minnesota, Alaska, and Iowa. Interestingly, the placement rates suggest that a student with disabilities "in New York [was] almost five times more likely to be placed in a highly restrictive separate class or separate school setting than [was] students residing in Oregon" (McLeskey & Henry, 1999, p. 62). Thus, it was concluded that where a student lives is a large factor in determining where, or in what setting, the student will be educated.

Although New York was among the states with the most restrictive placements for students with disabilities in general, throughout the 1990s, New York was one of only fifteen states to reduce their restrictive placement rates for students with learning disabilities only (McLeskey et al., 2004). Thus, although New York ranked quite low for least restrictive

placement rates in general, it appears that the disability category plays a role in its placement rates, with students with learning disabilities seeing movement toward inclusion. Furthermore, within the learning disability category itself, the states vary. Out of the remaining states who did not reduce their restrictive placement rates, some saw relatively stable placement rates whereas others moved to more restrictive placements (McLeskey et al., 2004).

Moving forward, McLeskey and Colleagues (2011) compared the placement rates for students with learning disabilities only from the 1998/99 school year to the 2008/2009 school year. It was found that 45 states moved toward less restrictive placements (McLeskey et al., 2011). This change likely reflects the change in policy with the 1997 IDEA amendments that emphasized the LRE by adding it to the IDEA statute itself; as prior to these amendments, in all but 15 states, students with learning disabilities saw either no change in their placements or more restrictive placements. Thus, the evidence suggests that the IDEA has resulted in improved placements in the LRE especially following the 1997 amendments.

Unfortunately, even in the states with movement toward less restrictive placements, evidenced from the 1998/99 school year to the 2008/09 school year, there was still much variation in the extent of this change across these states. For example, several states had placements in more restrictive environments at more than one standard deviation above the national average (McLeskey et al., 2011). These states included Hawaii, Illinois, Iowa, Pennsylvania, New Jersey, and New Hampshire (McLeskey et al., 2011). Thus, these states had much higher rates of restrictive settings than the remaining states. Thus, although the 1997 IDEA amendments and the push for the LRE were evident in an overall movement toward less restrictive placements in most states, among these states the extent of change varied.

Looking ahead another decade at the 2019 school year, placement rates continue to vary across states. In all states, though, the majority of students with disabilities were placed in the GE classroom. For Alabama, Nebraska, Vermont, Colorado, Mississippi, and Indiana, over 75% of students with disabilities were educated in the GE classroom. The percentage range of students educated in the GE classroom was 44.6% (New Jersey) to 83.6% (Alabama). New York had 58.2% of students with disabilities being educated in the GE classroom, 11.5% in pull-out settings, and 23.5% in separate settings. Thus, New York fell at the lower end of the range for placement in the GE classroom.

Placement rates have continued to move toward less restrictive environments in contingence with changes in court decisions and policy changes, thereby suggesting that the IDEA and court interpretations of its provisions have an influence on the practices of schools. However, it can also be seen that the extent of the movement toward less restrictive environments has varied greatly across states. These differences may stem from a multitude of factors.

Funding the IDEA and the LRE

A potential explanation for state variation in placement rates is funding. With the enactment of the EHA in 1975, the first commitment was made to fund the newfound requirement to educate students with disabilities (U.S. Department of Education, 2022). Here, it was determined that the federal government would cover up to 40% of the average per-pupil expenditure or APPE (Snyder, 2009). The APPE is determined by comparing the excess spending between a general education student and a special education student (National Education Association, 2018). Thus, the federal government committed to funding at most 40%

of this excess, leaving the states and local governments to provide the remaining costs (Snyder, 2009).

The plan for which the federal government will fund the IDEA is outlined in Part B of the statute with a grants-to-states formula. Grants were determined based on the number of students with disabilities multiplied by the national average per pupil expenditure (APPE) (Dragoo, 2019). It remains unclear whether the commitment to full funding was a goal or a standard (Apling, 2001a), although when the EHA was being passed, President Ford expressed his concerns that full funding was out of reach (Dragoo, 2019). His concerns were well-founded, as federal funding has never exceeded 16.5% (Apling, 2001b). In the 1997 IDEA amendments, the grants-to-states formula based on the number of students with disabilities in a state was changed. This was due to concerns that this formula would incentivize states to over-identify students with disabilities in an attempt to receive more funding (Kolbe et al., 2023). The 1997 amendments created a new formula based on the amount received the prior fiscal year as its base funding, and additional funding based on the state's share of all students aged 3-21 and the state's share of children aged 3-21 living in poverty (Dragoo, 2019). There were also restrictions on the amount that funding could change, limiting its minimum and maximum amounts (Apling, 2001a).

Following this new formula, funding for the IDEA increased dramatically. From 1996 to 2004, funding for the IDEA increased by 250% (Apling, 2004). Additionally, from 1999 to 2021, funding increased by 210% (Kolbe et al, 2023). However, funding remained well below the full funding level. For example, in the 2013/2014 school year, the APPE was $12,057 making the federal full funding contribution to be $4,823, but the federal government only funded $1,743 (Griffith, 2015). Thus, not only are states required by IDEA to provide a free and appropriate

public education for all students with disabilities, but they are also given the financial burden to do so as well.

The new formula should, in theory, provide states that have more students and more students in poverty with more funding. Unfortunately, this goal has not been its outcome when looking at funding per student with disabilities (Kolbe et al., 2023). The difference between states with the most and least funding increased by 193% following the implementation of the new formula (Kolbe et al., 2022). For example, from 1999 to 2021, Nevada's funding increased by 174%, whereas Vermont's funding increased by 461% (Kolbe et al., 2023). However, this could reflect that the new formula attempts to account for a state's poverty level and number of students. However, in the 2021 fiscal year, students with disabilities living in poverty received 10% less funding (Kolbe et al., 2023). Furthermore, students with disabilities in states with the largest population of students aged 3-21 received 12% less funding, and 9% less funding in states with the largest increases in student population (Kolbe et al., 2023). If there remain significant disparities in the populations the formula seeks to address (states with the biggest population of students and students in poverty), yet the formula sought to account for these variables, it is unclear what the practical effect of the new funding is.

There have been efforts in Congress to require full federal funding for the IDEA, however, they have yet to be successful (Snyder, 2009; Apling, 2001b). Thus, as aforementioned, it is up to the states and local education agencies to fill the funding gap left by the federal government (Snyder, 2009). State funding can take many different avenues, such as funding based on placement, disability, resources, flat rate, or reimbursement (Willard, 1998). These different avenues have the potential to influence the placement of students within a state, by making certain placements more financially appealing than others to school districts.

A longitudinal study of Tennessee found a relationship between the change in the state's funding formula and student placement (Dempsey & Fuchs, 1993). When Tennessee moved from a flat rate (equal funding for students) to a weighted reimbursement formula (funding based on the specific program or resources used) there was a statistically significant decrease in LRE placements and an increase in more restrictive placements (Dempsey & Fuchs, 1993). Additionally, states using a disability-based funding formula, which assigns higher weights to higher-cost disabilities, had higher percentages of high-cost disabilities than the national average (Mahitivanichcha & Parrish, 2005). Additionally, census-based funding has been shown to have implications for increased identification rates for students with disabilities (Green & Forster, 2002). Thus, evidence suggests that state funding policy has implications for the placement practices of schools.

Furthermore, funding formulas based on placements have the capacity to incentivize more restrictive environments (Willard, 1998). This occurs when funding formulas determine that educating a student in a separate setting requires more funds than does educating a student in the general setting (Willard, 1998). For example, in Texas, students with disabilities in the general education classroom receive 10% additional funding than a GE student, whereas students with disabilities in separate settings receive 200% additional funding than a GE student (Griffith, 2015). Thus, a school district has a financial incentive to educate a student in a separate setting rather than educating that same student in the general education classroom with the appropriate supplementary aids and services (Mahitivanichcha & Parrish, 2005). One notable case of this occurred in *Board of Education v. Holland* when a school district denied a general education placement for a student, as this less restrictive placement would lose the district $190,764 in state funding (Willard, 1998).

A review by Mahitivanichcha and Parrish (2005) did not identify a uniform trend for more restrictive placements in all states using a placement-based formula. However, both New York and New Mexico, which had the highest rates of restrictive placements, both used a placement-based formula (Mahitivanichcha & Parrish, 2005). Similarly, O'Reilly's (1995) review suggested that, out of the five states with the most restrictive placements, three used placement or placement/disability-based funding (as cited in Willard, 1998). On the other hand, this review found that of the thirteen states with the least restrictive placements, none used a placement-based formula. Although the relationship between placement-based formula and placement rates may not apply universally across states, there are some notable relationships between states with the highest and lowest restrictive placement rates and the funding formula utilized in that state.

If certain funding formulas incentivize restrictive placements, there is a clear disconnect between these states' formulas and the LRE goal of the IDEA (Parrish, 1994). With the failure of the federal government to fully fund the IDEA, state funding formulas are much more consequential in influencing the placement rates across school districts in their states. On the other hand, if federal funding reached its aspired amount, the influence of state funding may be less consequential.

Special Education and the LRE in New York State

New York state special education policy is required to be in compliance with the IDEA (New York State Education Department, 2022a). Thus, the state policy must, at the minimum, provide the same protections that the IDEA does. However, states can extend their requirements beyond this policy and provide further protections. There are some areas for which New York chooses to further IDEA's provisions. For example, in New York State Education Law part 200 it

is specified that students cannot be moved to private schools without considering public school options (New York State Education Department, 2022b). Furthermore, it requires that the Board of Education take action when a pattern of inappropriate private or residential placements emerges. The New York law also requires several IDEA indicators to be reported annually to the Board of Education. Thus, New York Special Education Law is in direct alignment with the IDEA Act and even offers some further protections not outlined in the federal statute.

However, as aforementioned, the way in which a state funds special education is up to its own discretion, which can allow for much variation in the implementation of IDEA especially with regard to the LRE. New York originally had a funding formula based on placement (Parrish, 2000). This provided students in more restrictive placements with more funding, and students in less restrictive placements with less funding. As aforementioned, and in line with this formula, New York had among the highest in the country for placement rates in more restrictive settings (Mahitivanichcha & Parrish, 2005). The formula used in New York received significant backlash, due to its seeming influence on more restrictive placements for students (Parrish, 2000; Verstegen et al., 1998). It is clear throughout state placement data that New York ranked significantly higher than the national average for placements in restrictive settings (McLeskey & Henry, 1999; Data reports to Congress, 2021; Kurth, 2015; McLeskey et al., 2011).

In 1997, news articles indicated New York's desire to move toward a different funding model due to the implications of their placement-based funding model (Verstegen et al., 1998). Originally, it was predicted that New York would move to a census-based formula (Verstegen et al., 1998). This would fund schools based on the number of students identified with a disability. However, instead, to counteract the experienced financial incentives toward more restrictive environments, New York created a new financial incentive for moving students with disabilities

to the LRE (Parrish, 2000). This provided the highest level of funding for a student who was moved from a more restrictive placement into the LRE or the GE classroom (Mahitivanichcha & Parrish, 2005). This was likely in response to a claim by the federal government which determined that New York would lose hundreds of millions of dollars in federal aid if the state continued with its failure to reduce restrictive placements (Hernandez, 1999).

In 2008, New York moved away from all placement-based funding entirely, including the LRE incentive (Ahearn, 2010). Instead, the state now utilizes a single student weight formula, which funds special education students at the same rate regardless of disability type or placement (EdBuild, 2023). The most recent data indicate that the single student weight rate is based on 2.41 times the amount of funding for a general education student (EdBuild, 2023). This rate occurs unless a student meets a certain threshold, at which state funding will increase. This threshold is "the lesser between $10,000 or four times the annualized expense per pupil" (Ahearn, 2010). This threshold is reached with placement in a separate class or separate school (Kingsbury, 2020).

Looking at the placement rates in New York as a whole, placement in the LRE has increased substantially over time. In the 1994 Data Reports to Congress, New York educated 38.92% of students with disabilities in the general education classroom and 42.3% in separate settings (U.S. Department of Education, 1997). In comparison, the national average for GE placement was 44.51% and 24.50% for separate settings (U.S. Department of Education, 1997). Thus, in 1994, New York had lower placements in the GE classroom, and much higher placement rates in separate settings. Today, the most recent data indicates that New York educates 58.4% of students with disabilities in the GE classroom and only 19.0% in separate classrooms (U.S. Department of Education, 2021). In 2019, New York's placement rates fell

much closer to the national average which is 64.8% in the GE classroom and 15.2% in separate settings, however, still remain at a more restrictive level (U.S. Department of Education, 2021). In general, all states have moved toward less restrictive placements over time (McLeskey et al., 2011). However, New York lagged behind this transition and remains at the lower end for LRE placement still today. Nonetheless, given that New York stands closer to the average LRE placement than it did in the past, it is possible that their change in funding formula played a role in this transition.

It is also important to assess whether students with disabilities are being educated in the LRE to a similar extent across the state. Rural schools experience unique difficulties implementing the IDEA. For example, rural schools experience difficulties recruiting and retaining highly qualified special education personnel (Mullin & Stenger, 2013; Theobald, 1999; Stelmach, 2011; McCabe & Ruppar, 2023; Helge, 1981). Furthermore, being in isolated areas, rural districts also often have a geographic barrier to providing services, programs, or personnel that may be beneficial to students (McCabe & Ruppar, 2023; Helge, 1981). Additionally, rural areas have higher poverty rates (Rowland & Lyons, 1989; Turange, 2020), leading to a much lower tax base from which local districts receive funding (Helge, 1981). Therefore, funding in these areas is much lower as well.

Looking at the LRE requirement of the IDEA, evidence has suggested that students in rural districts have less restrictive placements than their urban and suburban counterparts (Brock & Schaefer, 2015; McCabe & Ruppar, 2023). A case study of Ohio specifically demonstrated that students in rural districts were placed in the general education classroom significantly more than in both urban and urban fringe districts (Brock & Schaefer, 2015). Accordingly, students in

urban and urban fringe districts are placed in more restrictive environments significantly more than in rural schools (Brock & Schaefer, 2015).

To further my analysis of New York state, I examined the general education placement for students with disabilities in rural districts across the state. I used the New York Education Data Hub by Cornell University (2022) to identify the rural districts in New York. Then, using New York's district data summaries, I gathered the GE placement rates for each rural district (New York State Education Department, 2023). The average GE placement rate for rural districts in New York was 63.24%. In comparison to New York's GE placement for all districts (58.4%), it can be seen that the rural districts alone placed in the GE classroom at a higher rate. This is in line with previous research that suggests rural schools have less restrictive placement rates (Brock & Schaefer, 2015; McCabe & Ruppar, 2023).

It is evident that variation exists in the implementation of the LRE both within and across states. New York as a whole has historically struggled with its implementation of the LRE. Although this has greatly improved over time, New York still falls at the lower end for less restrictive placements. It is likely that funding plays a role in these differences, with the failure of federal funding to reach its aspired amount leaving state and local funding to play more important roles in the funding of special education services. In New York, a single-weight formula is used for state funding which provides the same funding for students regardless of placement or disability, unless the costs of service exceed a certain threshold, a threshold that is often reached when placement occurs in a separate setting. In addition to state funding, New York utilizes local taxes to fund local schools, which are based on the income and property of the resident. In rural areas, where poverty rates are higher, this may exacerbate differences in funding and potentially differences in placement.

Special Education Faculty Stress and Burnout

Another critical component of the implementation of the IDEA is special education faculty. This includes teachers, teaching assistants, and related service providers who implement the services to the students. Unfortunately, in "'people-oriented' professions including health care, social services, mental health, criminal justice, and education," stress and burnout are common (Maslach & Schaifeli, 1993, p. 2). Burnout can be described as a "gradual emotional depletion and a loss of motivation and commitment" (Maslach & Schaifeli, 1993, p. 2). It is often thought to be a form of "prolonged job stress" (Maslach & Schaifeli, 1993, p. 9). Maslach breaks burnout down into three facets: emotional exhaustion, depersonalization, and personal achievement (Maslach & Schaifeli, 1993). Emotional exhaustion references depleted emotional resources, depersonalization references negative attitudes toward patients or students, and personal accomplishment references a positive evaluation of oneself and their work. Higher emotional exhaustion and depersonalization signify higher burnout, whereas lower personal accomplishment signifies higher burnout (Maslach et al., 1996). Although stress and burnout are common in education as a whole, special education teachers are found to experience higher levels of stress and burnout than their general education counterparts (Fore et al., 2002).

Outcomes of Stress and Burnout in Faculty

Stress and burnout are quite harmful, not just for teachers themselves, but also due to their relationship with other negative outcomes. Stress, burnout, and factors related to them are linked with retention in teachers (Grant, 2017). For example, a qualitative study found that teachers reported experiencing stress and burnout and reported looking for another job as a result (Grant, 2017). The problem of retention is common in the field of education as a whole but particularly in special education (Boe & Cook, 2006; Theobald, 1991). Not only has the shortage

of special education teachers increased over the years, but so too has the demand for special education teachers (Boe & Cook, 2006). Thus, it is critical to identify the reasons for such a shortage.

Social support has been shown to be important for the retention of special education teachers (Albrecht et al., 2009; Berry, 2012; Billingsley, 2004). For special education teachers working with students with emotional/behavioral disorders specifically, teachers who reported an intent to stay in their positions also reported higher levels of administrative support (Albrecht et al., 2009). Similarly, special education teachers in rural schools who reported an intent to stay also reported higher levels of support from colleagues and administrators (Berry, 2012). Another important finding outlines that support for new special education teachers in their early years had implications for their intent to stay, such that those who experienced early support reported an increased intent to stay (Billingsley, 2004b). This finding is critical due to the multitude of evidence that suggests a relationship between age and attrition, which indicates teachers early in their careers are more likely to leave the profession than teachers in later years (Billingsley, 2004a).

Moreover, job satisfaction has important implications for attrition in special education teachers. Evidence suggests that less job satisfaction is linked with attrition (Stempien & Loeb, 2002). Additionally, special education faculty were found to be significantly less satisfied with their jobs than general education faculty (Stempien & Loeb, 2002). Teachers in this study reported dissatisfaction with the size of their classes, planning time, and the amount of paperwork specifically.

Special education teacher stress and burnout also have negative implications for the students. In a qualitative study by Rizvi Jafree and colleagues (2022), there were nine themes

that special education teachers identified as barriers to their teaching effectiveness. Some of these themes included understaffing, lack of resources, low self-efficacy, and stress. Thus, stress and other variables related to stress may have negative implications for teaching quality. Furthermore, teachers with higher levels of burnout also have students with lower-quality IEPs and students who are not achieving their IEP goals (Ruble & McGrew, 2013; Wong et al., 2017). Similarly, stress was predictive of teaching quality and student engagement, with higher stress being associated with decreased teaching quality and student engagement (Wong et al., 2017).

Predictors of Stress and Burnout in Faculty

Due to the negative outcomes associated with stress and burnout, it is critical to understand what factors contribute to them. In special education, there are several factors that are predictive of stress and burnout in faculty. The school environment in which special education faculty work has significant implications for their experience of stress and burnout. For example, the amount of support from colleagues and administrators plays a major role in the experience of stress and burnout for faculty (Hamama et al., 2012; Langher et al., 2017; Nichols & Sosnowski, 2002; Brunsting et al., 2014). More specifically, Hamama and colleagues (2012) reported in a study of teachers in special education schools that colleague support moderated the relationship between work stress and positive affect, suggesting that even when experiencing stress, faculty who have peer support still display positive affect. Furthermore, a study by Langher and colleagues (2017) of primary and secondary special education teachers shows that teachers who had more support also displayed lower emotional exhaustion and depersonalization, and a greater sense of personal achievement. Thus, this study suggests that support has important implications for the experience of each facet of burnout. Similarly, in special education teachers in self-contained classrooms specifically, the depersonalization facet of burnout has been found to

decrease as satisfaction with support increases (Nichols & Sosnowski, 2002). Therefore, several studies suggest that a work environment that fosters support from administrators and colleagues may be a protective factor against the experience of stress and burnout in special education faculty.

Furthermore, the conditions of the work environment also have implications for stress and burnout in faculty. Abel and Sewell (1999) found that poor working conditions were related to burnout in both urban and rural general education teachers. Poor working conditions in this measure included a lack of resources, inadequate facilities, and low salaries (Abel & Sewell, 1999). This is an important finding, as a review by Billingsley and colleagues (2020) outlines several studies showing that special education teachers report insufficiencies with resources and materials.

There are also classroom-level environmental factors that have important implications for the experience of stress and burnout in special education faculty. A review by Brunsting and colleagues (2014) identified that working in self-contained classrooms may be indicative of burnout in faculty. Additionally, a review by Ryan and colleagues (2021) outlines several studies that show that faculty working in residential and hospital settings who had more exposure to challenging behaviors also had higher levels of stress and burnout levels. Similarly, faculty who had negative reactions to such challenging behaviors, such as angry or anxious reactions, had higher levels of emotional exhaustion and depersonalization (Ryan et al., 2021). Furthermore, student diagnosis is predictive of stress and burnout in special education teachers (Brunsting et al., 2014; Nichols & Sosnowski, 2002). More specifically, as teachers in self-contained classrooms reported a higher proportion of students with emotional and behavioral disorders, their levels of stress and burnout were higher as well (Nichols & Sosnowski, 2002). Similarly,

the number of students with ASD diagnoses in the classroom was correlated with the level of teacher burnout, with more ASD diagnoses predicting higher burnout (Brunsting et al., 2014).

Conclusion

Thus, stress and burnout, and the factors that contribute to them, have several negative implications from teacher turnover to poor student achievement. It is critical to study such factors in order to combat these negative outcomes. Furthermore, studies should target the identification of factors that contribute to stress and burnout for special education in rural areas specifically. This is because, as discussed previously, rural areas already see more prominent understaffing issues (Theobald, 1999; Stelmach, 2011) and higher turnover (Mullin & Stenger, 2013). Additionally, rural schools tend to have resource problems (McCabe & Ruppar, 2023; Stelmach, 2011). Thus, identifying whether these pervasive issues in rural schools contribute to stress and burnout in faculty is critical.

Survey of Special Education Faculty

The ability for research to identify areas that contribute to the stress and burnout of special education faculty will allow for attention to be drawn toward making improvements in these areas, especially with regard to special education policy. Thus, the current study aimed to identify whether shortcomings in rural school environments concerning staffing, resources, and support, and one aspect of IEP quality, student placement in the LRE are related to stress and burnout in faculty. To do so, I surveyed special education faculty including teachers, TAs, and related service providers in one rural area of New York.

In accordance with the literature, I created six hypotheses to identify correlates with stress and burnout in special education faculty. Previous research has identified a lack of adequate resources as a barrier to teacher effectiveness (Rizvi Jafree et al., 2022). Evidence also

indicates that rural schools have a tendency toward under-resourcing (McCabe & Ruppar, 2023; Stelmach, 2011). Thus, I wanted to examine whether resource inadequacy was correlated with stress and burnout. I hypothesized that faculty with fewer resources will be more stressed and burned out than faculty who report having adequate resources. Similarly, due to prominent understaffing in rural schools (Theobald, 1999; Stelmach, 2011), I wanted to assess whether staffing concerns had implications for faculty stress and burnout. I hypothesized that the less adequate staffing that faculty report, the higher their levels of stress and burnout will be.

Previous research has indicated that support from colleagues and superiors is correlated with facets of burnout in special education teachers (Hamama et al., 2012; Langher et al., 2017; Nichols & Sosnowski, 2002; Brunsting et al., 2014). Based on these findings, I hypothesized that faculty who report less support from colleagues and superiors will also report that they are more stressed and burned out.

Previous studies have also indicated relationships between burnout and classroom variables like setting and student diagnosis. More specifically, research suggests that faculty in self-contained special education classrooms experience higher levels of burnout and that a higher number of students with ASD diagnoses in a self-contained classroom was linked with higher burnout in faculty (Brunsting et al., 2014; Nichols & Sosnowski, 2002). ABA classrooms are self-contained classrooms, most used for students with ASD diagnoses. Furthermore, more restrictive environments such as self-contained classrooms are common for students who exhibit more challenging behaviors, which is also predictive of higher burnout in faculty (Ryan et al., 2021). Thus, I hypothesized that faculty in ABA classrooms would report higher levels of stress and burnout than faculty in other settings.

Last, burnout in special education faculty has been correlated with IEP quality, outcomes, and achievement (Ruble & McGrew, 2013; Wong et al., 2017). Time spent in the LRE is one component of a student's IEP and a major component of the protections of the IDEA. Based on the research that IEP quality was lower when teachers scored higher on the emotional exhaustion facet of burnout, I hypothesized that the more faculty are stressed and burned out the more students they will report are not in the LRE. Not incorporating appropriate time in the LRE in a student's IEP could be due to the stress and exhaustion experienced by the faculty, such that they may not have the energy to put into incorporating the LRE for their students.

Method

Participants

Participants were recruited from five rural school districts and one ABA program in the same area in rural northern New York. I reached out to the Special Education Chair at each location to receive permission to survey all of their special education faculty. This included teachers, teaching assistants, and related service providers. Upon giving permission, the chairs forwarded my survey to the participants. Before beginning the survey, participants gave informed consent to participate (see Appendix A). There were 92 total participants between the ages of 21 and 62 (M= 41.72, SD= 10.02). There were 84 females, 5 males, one non-binary participant, and one who preferred not to say. Ninety-one participants identified as white and one preferred not to say. Eighty-eight participants identified as non-Hispanic, one identified as Hispanic, and 2 preferred not to say. There were 49 teachers, 28 teaching assistants, and 15 related service providers. Seventeen participants were in ABA classrooms and 61 were in other settings.

Materials

The Emotional Behavioral Disorders Teacher Stressors Questionnaire (EBD-TSQ) was used to assess participants' stress levels from potential occupational stressors. Center and Stevenson (2001) reported that special education teachers and emotional/behavioral special education teachers did not differ significantly in their scores, so this measure is considered to assess occupational stressors common to special education in general. This measure asks participants to rate their experiences with certain occurrences in the classroom such as “I find violent behaviors by my students towards me…” and “I find having to work with too many disabilities…” as not experienced, not distressing, or distressing, (coded as zero, one, and two respectively). Responses to each of the 31 questions were summed into a total stress score. High scores on the EBD-TSQ indicate more stress. The EBD-TSQ has demonstrated strong test-retest reliability (r=.91) and content validity (Center & Calloway, 1999 as cited in Center & Stevenson, 2001).

Maslach's Burnout Inventory was used to assess participants' levels of burnout (Maslach et al., 1996). The MBI assesses burnout with three subscales: Emotional Exhaustion (EE), Personal Achievement (PA), and Depersonalization (DP). There are nine questions in the EE subscale. Participants were asked to rate how often they experience questions such as “I feel emotionally drained by my work” and “I feel tired when I get up in the morning and have to face another day at work” on a 7-point Likert scale anchored with *Never* (1) and *Daily* (7). Responses to the items in each subscale were averaged to obtain a mean burnout score for each subscale. Higher scores on the EE indicate higher levels of burnout. Maslach and Colleagues (1997) reported strong internal consistency for the EE subscale (α=.90), PA subscale (α=.71), and DP subscale (α=.70). In the current study the EE subscale had strong internal consistency (α=.92), whereas subscales for DP (α=.62) and PA (α=.72) had much weaker internal consistency. Thus,

in accordance with evidence suggesting EE to be the best predictor of burnout (Kulberg, 2019), and the lack of internal consistency for the other subscales, analyses on burnout in this study were conducted with just the EE subscale.

I constructed the last measure to assess participants' school environments including questions on resources, staffing, professional development opportunities, caseload, supervision, support, and classroom practices. This section included twenty-nine questions. Questions were answered on a 5-point Likert scale anchored with *strongly disagree* (1) and *strongly agree* (5). My analyses focused on the five questions that assessed resources, staffing, support, and student placement in the LRE. To assess resources I used the questions "My school has adequate facilities (i.e. enough rooms, dividers)" and "My school has adequate resources (i.e. school supplies, manuals, Chromebooks)." These two resourcing questions were averaged to create a new variable, "Resources." Higher scores indicate more adequate resources. To assess staffing I used the questions "My school has plenty of faculty" and "On average, the staff here are competent." These two staffing questions were averaged to create a new variable, "Staffing." Higher scores indicate more adequate staffing. To indicate levels of support I used two different areas of support, superior support "My superiors are supportive" and colleague support "My colleagues are supportive." These support questions were analyzed separately as "Colleague Support" and "Superior Support." Higher scores indicate more support.

I also asked one question "Are you in an ABA classroom" to determine whether the faculty were in an ABA classroom with a "yes" or "no" response. Last, to assess the extent to which students in their classroom were included in the LRE to the maximum extent possible, I used the question "How many of your students with autism should be pushed into gen-ed

classrooms who are not?" Participants responded on a scale from zero to twelve. Higher scores indicate more students not being in the LRE to the maximum extent possible

Procedure

The survey was assembled via Qualtrics and was approved by Union College's Human Subjects Review Committee. Before beginning the survey, participants gave informed consent to participate by reading an overview of the study and pressing "I agree" to continue (see Appendix A). The survey took approximately fifteen minutes to complete. Upon completion, participants were debriefed on the full explanation of the study, (see Appendix B). Then, participants were instructed on how to participate in a raffle for a $50 Amazon gift card if they chose to do so.

Results

Table 1

Descriptive Statistics

Variable	*M*	*SD*	95% CI [LL, UL]
Stress	36.17	9.14	[35.03, 39.41]
Burnout	3.66	1.42	[3.39, 4.05]
Resources	3.47	1.07	[3.22, 3.73]
Staffing	3.16	0.96	[2.91, 3.37]
Colleague Support	3.86	1.14	[3.55, 4.08]
Superior Support	3.88	1.06	[3.63, 4.12]

LRE	1.70	1.45	[1.34, 2.02]

Note. M and *SD* stand for mean and standard deviation respectively. CI, LL, and UL stand for confidence interval, lower limit, and upper limit respectively.

Table 1 provides the means and standard deviations for each variable I assessed. For stress, on average, participants scored 36.17 out of a potential 62. On the MBI EE subscale, on average, participants fell between once a month and a few times a month on the Likert scale. Participants were between neutral and agree on statements assessing whether their resources, staffing, and support were adequate, however, staffing showed the lowest score. Burnout and stress were positively correlated, $r(84) = .58$, $p < .001$.

Adequacy of resources was negatively correlated with both stress, $r(76) = -.37$, $p < .001$, and burnout, $r(76) = -.49$, $p < .001$, such that as resources decreased, stress and burnout increased which supported my hypothesis. Similarly, staffing was negatively correlated with stress, $r(76) = -.45$, $p < .001$, and burnout, $r(76) = -.51$, $p < .001$. As adequate staffing decreased, stress and burnout increased, in support of my hypothesis. Additionally, I hypothesized that support from colleagues and superiors would be negatively correlated with stress and burnout. In accordance with my hypothesis, support from colleagues was negatively correlated with both stress, $r(75) = -.35$, $p = .002$, and burnout, $r(75) = -.37$, $p < .001$, such that as support from colleagues decreased stress and burnout increased. Similarly, support from superiors decreased as stress, $r(76) = -.50$, $p < .001$, and burnout, $r(76) = -.52$, $p < .001$, increased.

In order to assess my hypothesis that faculty in ABA classrooms would have higher levels of stress and burnout, a 1-tailed independent samples t-test was conducted comparing faculty in ABA classrooms and faculty not in ABA classrooms. In partial support of my hypothesis, faculty in ABA classrooms ($M = 4.25$, $SD = 1.55$) reported significantly higher

levels of burnout than those in other settings (M = 3.51, SD = 1.36), $t(76) = -1.91$, $p = .03$, $d = -.52$. However, those in ABA classrooms (M = 38.24, SD = 11.82) did not report significantly higher levels of stress than those in other settings (M = 36.77, SD = 8.28), $t(76) = -.87$, $p = .195$, $d = -.24$. In the ABA classroom only 11.6% of participants were teachers, compared to faculty who were not in an ABA classroom, of which 65.57% were teachers. This difference was statistically significant, $x^2 (1, 78) = 15.50$, $p < .001$.

Last, I hypothesized that as stress and burnout in faculty increased, so would the number of students that they report are not in the LRE in their classroom. The number of students not in the LRE was positively correlated with stress, $r(71) = .23$, $p = .05$, and burnout, $r(71) = .29$, $p = .013$. As stress and burnout in faculty increased, so did the number of students who were not in the LRE, supporting my hypothesis.

General Discussion

In support of my hypotheses, several variables related to the level of stress and burnout in participants. First, less adequate resources were associated with higher stress and burnout. It could be that faculty become stressed and emotionally exhausted when their classrooms do not have adequate materials to provide the best education for their students. An article by the National Education Association estimates that 90% of teachers spend money out of pocket to provide supplies for their classrooms, at a rate of up to almost $900 a year (Litvinov, 2022). This may be exacerbated in rural areas, where funding and resources are lower. Previous evidence suggests that rural schools experience unique resourcing problems such as insufficient resources and equipment (McCabe & Ruppar, 2023; Stelmach, 2011). Given the tendency towards resourcing problems in rural schools and their relationship with stress and burnout, this is one area for which intervention is possible in order to mitigate stress and burnout in teachers. This is

especially important given other implications of inadequate resources such as decreased teaching effectiveness (Jafree et al., 2022). A lack of resources likely stems from a gap in funding, meaning that is where intervention would need to occur. However, rural areas experience high levels of poverty (Rowland & Lyons, 1989; Turange, 2020). This means that the tax base in these areas is much lower, resulting in less money coming into these schools (Helge, 1981). This is especially important, as with the lack of federal funding for special education programs, schools rely much more heavily on the money from local taxes to fund their programs. Therefore, interventions to target resource adequacy should turn toward federal funding. This way, the disparities in local tax revenue would not have as prominent of an impact on resources which likely occurs in rural schools, due to these areas' high poverty levels.

Classroom-level variables have also been predictive of stress and burnout in special education faculty. Previous research suggests that more exposure to more challenging student behaviors, and a higher number of students with an ASD diagnosis predict increased stress and burnout in faculty (Brunsting et al., 2014; Ryan et al., 2021). Furthermore, faculty in self-contained classrooms are found to have higher levels of burnout than faculty in other locations (Brunsting et al., 2014). Thus, I hypothesized that faculty in ABA classrooms would have higher levels of both stress and burnout. However, this was only true for burnout and not stress. Stress and burnout are linked (Center, 2001), and burnout is considered to be a form of "prolonged job stress" (Maslach & Schaifeli, 1993, p. 9). However, stress and burnout did not relate in the same manner to whether or not faculty were in an ABA classroom. The previous research on faculty in self-contained classrooms only looked at burnout, thus, the current study confirms the relationship between a secluded classroom and burnout. However, the current study suggests that ABA classrooms have characteristics that are more important for symptoms of burnout rather

than stress. The current study had many fewer participants in ABA classrooms, thus the sample was small, which could contribute to this difference as well. Furthermore, in the sample of faculty in ABA classrooms, there were significantly fewer teachers than in the sample of faculty not in ABA classrooms. It is possible that job position plays a role in why burnout was correlated to whether or not faculty were in an ABA classroom, but stress was not. It is possible that teachers may experience more stress than faculty in other positions. Future research should examine these relationships with a larger sample. Additionally, if the relationship between stress and faculty in ABA classrooms does not exist, future research should investigate what job characteristics in self-contained classrooms play into burnout more than stress in order to understand how to better support faculty in these positions.

Additionally, in accordance with the literature (Hamama et al., 2012; Langher et al., 2017; Nichols & Sosnowski, 2002; Brunsting et al., 2014), less support from both colleagues and superiors was correlated with higher levels of stress and burnout in this rural sample. The previous literature identified this relationship in teachers in all geographic areas, the current study extends this literature by looking at all special education faculty, including TAs and related service providers, and by looking at rural schools specifically. Support in the school environment is important to study, as evidence suggests that support also has implications for teacher retention and attrition (Billingsley, 2004). Thus, implementing and promoting support may serve as a protective factor for stress and burnout in faculty, which may, in turn, protect against attrition.

Protecting against attrition is critical for many reasons. First, the current study found that having too few and not as competent staff was also correlated with higher stress and burnout. This could be due to having less help in the classroom, thereby having to manage too many

students at once. Additionally, if staff are less competent, faculty may have to pick up more responsibilities or take over some responsibilities for which other faculty are not able, thereby increasing stress and burnout. In general, staffing issues like understaffing and lower competency are common in rural schools (McCabe & Ruppar, 2023; Stelmach, 2011; Theobald, 1991). Moreover, rural schools experience significant difficulties recruiting and retaining special educators, contributing to the understaffing prominence (Theobald, 1991; Boe & Cook, 2006). Unfortunately, without proper staffing levels and competency, programs and their efficacy may be compromised. This could mean that students' IEPs may be developed based on what the school can provide, rather than what is best for the student if staff are not available to provide it (Turnage, 2020).

Lastly, higher levels of stress and burnout in faculty were associated with a higher number of students that the faculty felt were not in the LRE. This is a critical finding, as it suggests that faculty stress and burnout could hinder the full implementation of the IDEA. Previous research has identified that emotional exhaustion is negatively correlated with IEP quality for students with autism specifically (Ruble & McGrew, 2013). To measure IEP quality, Ruble and McGrew (2013) created a mean score based on whether and the extent to which behavior, communication, social, and other objectives based on the IDEA were evident in a student's IEP. Time spent in the LRE is one facet of a student's IEP and a major facet of the proper implementation of the IDEA. The current study furthered this information by Ruble and McGrew (2013) by identifying that the LRE facet of a student's IEP was also associated with teachers' stress and burnout, such that as stress and burnout increases, so does the number of students in the classroom who are not in the LRE to the maximum extent possible. Access to the LRE is critical for student success in several ways. Not only is access to the GE classroom

correlated with better academic outcomes (Rea, et al., 2022; Oh-Young & Filler, 2015; Krämer, 2021; Baker et al., 1995), but it also has important social benefits as well (Hunt & Goetz, 1997; Szumski et al., 2017). Furthermore, access to the LRE to the maximum extent possible is a federally protected right for students, thus this shortcoming needs to be addressed.

The current study identified relationships between stress and burnout and several factors in rural New York. Thus, caution may need to be taken when generalizing these findings to schools that are more diverse, in other locales, and in other states. The sample was highly White, female, and non-Hispanic. Furthermore, the survey was conducted in only one rural area of New York. As aforementioned, state funding formulas play a role in the placement rates of students with disabilities across the nation. New York utilizes a single-weight formula to fund its special education services. In states with different formulas, it is possible that the placement of students in the LRE may not be linked to the stress and burnout of their faculty in the same way as it was in this study. However, the findings in this study are in line with previous evidence that suggests that rural schools experience shortcomings in resources and staffing, which have also been correlated with stress and burnout in other samples.

Additionally, other than the measures of stress and burnout, the remaining questions on the survey were author-generated and thus have not been fully validated. Another limitation is that the survey did not ask faculty to indicate their thoughts on why the students in their classroom were not in the LRE. This would have provided further insight into what specific barriers faculty feel are truly hindering the implementation of the IDEA. Furthermore, this study was a correlation, and thus it cannot be certain whether the stress and burnout in faculty are why students are not in the LRE, if students not being in the LRE contributes to the stress and burnout in faculty, or if there is a third variable which contributes to both stress and burnout and LRE

placement. Nonetheless, this is the first study to relate stress and burnout in faculty with the LRE in students with autism and align this information with federal special education policy, state education policy, and funding.

Conclusion

The LRE clause of the IDEA is not being properly implemented in this rural sample, and this is predicted by the level of stress and burnout in the faculty, who are crucial to the implementation of the services required by IDEA. As can be seen by the levels of stress and burnout in the faculty, and the several correlates to the stress and burnout experienced by the faculty, it is clear that there are issues in rural special education that must be addressed. Resources and staffing are two variables that can be mediated by funding. As evidenced by the analysis of the IDEA, the federal government has fallen short of its promise to fund 40% of the APPE. Instead, beginning in 1975, the federal government protected an entirely new population to receive a free and proper education, which is a huge financial undertaking for schools. However, the government has never contributed enough funding to ensure that this can be done properly. Instead, state and local education agencies must pick up the cost of this federal requirement. This burden is especially heavy in rural areas, where poverty is prominent and funding is thereby lower. The differences in local and state funding have more prominent implications for the special education services offered, their quality, and whether they are truly the best practice for students, due to the lack of federal funding.

The current study furthered the understanding of the IDEA and its implementation by looking at its relationship to teacher stress and burnout. It is evident that interventions are necessary to address the stress and burnout experienced by faculty, particularly because of the

relationship found between the stress and burnout in faculty and the implementation of the LRE clause specifically.

Future studies should investigate the relationship between stress and burnout in special education faculty and the LRE for students with autism in urban schools. Given that urban schools have more restrictive placement rates in general, it would be important to see the relationship that stress and burnout may have for those placements as well. Furthermore, attention should be paid more closely to the effects that federal special education policy has on its implementers, as changes in such policy may be warranted to ensure that faculty are properly supported and able to provide proper services.

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Appendix A

Informed Consent

I am a senior psychology major at Union College in Schenectady studying stress levels among teachers and other professionals in special education classrooms. I am inviting you to participate in a research study. Involvement in the study is voluntary, so you may choose to participate or not. You will be asked to answer questions about your stress and experiences in your classroom. There are no known risks to you for participating in this study, but some questions will ask about stress. You are free to skip any questions that you would prefer not to answer. If you no longer wish to continue, you have the right to withdraw from the study, without penalty, at any time. All questions are voluntary, completely anonymous, and confidential. Please give your honest responses. This survey will take approximately 10-15 minutes. If you fill out the questionnaire, there will be an opportunity to enter a raffle for a $50 Amazon gift card. The directions for this will be provided at the end.

Even though all aspects of this study may not be explained to you beforehand (e.g., the entire purpose of my study), at the end of the questionnaire I will provide more information about my study and you have the opportunity to ask questions. If you have any questions about the research please contact Carly Mattice matticec@union.edu or Professor Stanhope (stanhopl@union.edu). If you have any questions concerning your rights as a research participant that have not been answered or if you wish to report any concerns about the study, you may contact the Union College Human Subjects Review Committee Chair Joshua Hart (hartj@union.edu) or the Office for Human Research Protections (https://www.hhs.gov/ohrp/).

By clicking “I Agree” you indicate that you understand the information printed above and that you wish to participate in this research study and the use of your anonymous answers in my senior thesis.

Appendix B

Debrief

Thank you so much for participating in my senior thesis project! Please remember that all of your responses are confidential and will only be used for the purpose of this study. I am exploring how stress is related to mainstreaming practices in the classroom as a way to shed light on how the Least Restrictive Environment clause of the Individuals with Disabilities Education Act act is upheld. If you or someone you know is feeling stressed, anxious, or depressed please dial 988 or text GOT5 to 741741 to reach a crisis counselor in NYS.

If you would like to be entered in the raffle for a $50 Amazon gift card, please send me an email at matticec@union.edu with the subject line Thesis Gift Card Raffle. Your request for the raffle is in no way linked to your answers to the questionnaire. And, if you would like to receive a brief summary of my results when I am done in the spring, please send me an email at the same address. If you have any further questions about this research project you can contact Carly Mattice matticec@union.edu

Thank you again!
Carly