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Understanding Differences In School District's Identification Rates For Children Receiving Special Education With An Emotional Disturbance: A Case Study In Vermont

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UNDERSTANDING DIFFERENCES IN SCHOOL DISTRICT'S IDENTIFICATION
RATES FOR CHILDREN RECEIVING SPECIAL EDUCATION WITH AN
EMOTIONAL DISTURBANCE: A CASE STUDY IN VERMONT

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ABSTRACT

Nationally, there is a mounting interest in better understanding students identified as having an emotional disturbance. Since 2005, clinical diagnosis and treatment of mental health issues in children has trended upward. Nationally, over that same timeframe, the number of students who qualify for special education due to an emotional disturbance (ED) has stayed relatively level while the percentage has been increasing in Vermont. Despite a greater awareness about how various circumstances and events, such as adverse childhood experiences (ACEs) affect children's mental health, emotional disturbance is still not well understood.

The purpose of this study is to examine factors affecting the variability among Vermont supervisory unions of the number of students identified as having an emotional disturbance and highlight the possibility of non-population-based factors associated with identification and classification of students.

Results indicate a relationship between community factors such as food insecurity, self-reported mental and physical distress, and lack of medical insurance and the percent of students identified as having an emotional disturbance. Results also suggest a relationship between student factors such as percent of students who are English Language Learners and the percent of students identified as having an emotional disturbance.

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CHAPTER 1: INTRODUCTION

Nationally, there is a growing concern about the escalating number of students identified as having an emotional disturbance (ED) and the considerable variability across states and districts in the share of students so classified, particularly with younger students (Redford, 2016). In Vermont, the statewide percentage of students identified for special education students with an ED was 18%, the highest in the nation and almost three times greater than the national average (Kolbe & Killeen, 2017) and according to Mental Health America (2020), Vermont's rate is closer to 27%. However, despite having a high overall rate of students identified with ED in the state, there is considerable variability in the share of students identified for special education with ED. For AY2017, the percentage of students identified for special education with an ED in a school district ranged from a low of 4.6% to a high of 34% (Vermont Agency of Education [VT AOE], 2019)

In Vermont, this situation has led to questions about how much of the overall trend and the variability across districts is due to actual changes in student needs, and how much is a reflection of other factors – particularly the policies, practices, and resources in place in schools, as well as educators' attitudes and beliefs (Artiles & Kozleski, 2016). Nationally and within Vermont, for example, there has been increased speculation that more students arrive at school having experienced traumatic events, and that this trauma history results in emotional and behavioral problems at school (Goodman et al., 2012). At the same time, Vermont has a broad range of policies intended to identify students who would benefit from additional support, and in turn this availability of

services and supports may translate into more students being identified with an ED than in the past (Kehle et al., 2004). Additionally, the way Vermont funds local special education programs may create incentives within districts to identify students with behavioral challenges as having ED to secure additional resources (Kolbe & Killeen, 2017). In other situations, as seen nationally, it may also be the case that general education teachers' attitudes and beliefs promote the idea that children with behavioral problems should be served outside the classroom (Brackett et al., 2012).

The purpose of this study is to investigate the factors that are related to the variability among Vermont school districts in the share of students identified for special education with ED. Specifically, I examine to what extent various student, school, and community factors relate to differences in identification rates across Vermont school supervisory unions and districts.

Understanding the extent to which factors outside or within school leaders' control are related to the share of students in a district who are identified with ED is a critical question for policymakers and practitioners. Students with ED are at high risk of failing to complete school. Nationally, approximately 58% of students identified as emotionally disturbed graduate, as compared to 70% for all students with disabilities and an overall public-school rate of 84%. Alternatively, 35% of students with ED drop out, compared with 18% for all students with disabilities and an overall rate of 6.1% (National Center for Education Statistics [NCES], 2017). This study examines the characteristics of students, districts, and communities to highlight areas that may be contributing to the identification and classification of students as emotionally disturbed. Identifying

differences between districts who identify larger and smaller shares of their student populations with ED can lead to more effective targeting of policies, programs and resources for special education programs.

<div align="center">**Background**</div>

Variability in Identification Rates for ED

Not all states have seen the same trends in the number of students who qualify for special education. Between 2000 and 2015, the percent change in the number of students served by special education ranged from 24% decrease in Rhode Island, to a 42% increase in Utah; within states, trends differ from those seen nationally, and we see variability between and within states (U.S. DOE, 2018).

Table1-1

Trends in Percentage of Students with IEPs Ages 6-21, Vermont & National Averages (2013-2015)

	Vermont			National		
	2013	2014	2015	2013	2014	2015
	(%)	(%)	(%)	(%)	(%)	(%)
Percent of All Students	15.6	15.9	16.1	13.0	13.3	13.3
By Disability Category						
Autism Spectrum Disorder (ASD)	8.4	8.6	8.9	8.4	8.9	9.3
Deaf-blind	0.1	0.1	0.0	0.0	0.0	0.0
Emotional Disturbance	17.6	18.0	17.6	6.2	6.0	5.9
Hearing Impairment (Including Deafness)	0.7	0.7	0.6	1.2	1.2	1.1
Intellectual Disability	6.4	6.1	6.0	7.3	7.2	7.1
Multiple Disabilities	1.9	2.0	2.0	2.2	2.2	2.1
Orthopedic Impairment	0.3	0.4	0.3	0.9	0.8	0.7
Other Health Impairment (OHI)	18.9	19.4	19.8	14.2	14.8	15.4
Specific Learning Disability (SLD)	33.9	34.0	34.5	40.4	40.1	39.8
Speech or Language Impairment	11.2	10.3	9.6	18.3	18.1	17.7
Traumatic Brain Injury	0.4	0.3	0.3	0.4	0.4	0.4
Visual Impairment (Including Blindness)	0.2	0.2	0.2	0.4	0.4	0.4

Note: Denominator is all children with disabilities (IDEA) ages 6-21, excluding those with developmental delays. Data reported for IDEA Child Count and

Educational Environments to the U.S. Department of Education.

Source: U.S. Department of Education, Part B Data Display (by State), Publication Year 2017 (https://osep.grads360.org/#report/apr/publicView)

This variability between and within states has raised questions about the intersection between how schools identify and assess students for ED and whether school practices/community resources might play a role in whether and how students are evaluated and how their disabilities are categorized. If the number of students identified is less than the prevalence of students with ED, this is problematic because it may indicate we are not providing the FAPE required (Hanchon & Allen, 2013).

The prevalence of students with IEPs under the category of ED should reflect the actual incidence in the population (Hanchon & Allen, 2018). We might expect this to vary slightly, since special education services are indicative of a need for support within the academic system. The variation seems to be much wider than that which is related to academic needs. Therefore, we have reason to suspect that there are issues unrelated to population and academic needs.

Overidentification of students is a problem because it indicates students are being labeled inappropriately, money is being spent ineffectively, and personnel are being hired and placed inefficiently (Hanchon & Allen, 2018; Morgan et al., 2017). Additionally, there may be a stigma associated with the classification of ED. Therefore, students and their families may experience negative repercussions. Conversely, underidentification means that children may not receive the supports and services they need.

Identifying Children for Special Education

Child Find

States must provide a free and appropriate public education (FAPE) to all children (U.S. DOE, 2018). Some students need services to start well before kindergarten and extend through age 21. To ensure that families know what resources are available, and districts know the needs of their students or potential students, there is a process called Child Find (VT AOE, 2018). IDEA requires states and districts engage in Child Find so students can be appropriately served.

Child Find may occur both prior to a child is enrolled in school and once a child attends school. Child Find efforts for young children, usually pre-kindergarten, seek to connect families and children with the school district. The process shares information about the district with families, and anyone who interacts with families and children, and encourages them to contact the district. Child Find is generally considered to comprise everything involved with special education: advertising, identifying potential students, referring children for evaluation, determining eligibility, and enrollment (Ennis et al., 2017). Common means of advertising include newspaper, social media, pamphlets at the offices of pediatricians and other professionals, and presentations at area preschools (VT AOE, 2018b).

Vermont has Early Childhood Special Education professionals who are tasked with providing FAPE for children from ages three through six (VT AOE, 2018b). Early childhood special educators work with elementary schools to help smooth the transition for students with whom they work. Sometimes the need for supports is not known until

after the child has entered pre-school and early childhood educators make recommendations to the appropriate district.

Once children are old enough to attend school, recommendations for assessing students for special education could come from families, school staff, teachers, or other professionals who interact with children, such as pediatricians. Generally, once concerns are raised, the initial discussion occurs at an Educational Support Team (EST) meeting that includes teacher(s), administrator(s), and counselor(s). Parents/Guardians sometimes attend these meetings, although it is not required. The team considers strategies for support within the general classroom and develops a timetable for implementation. They then set a date to review and assess the results (VT AOE, 2018b).

When the team reconvenes, they discuss results. If strategies were not successful, or if there are other concerns raised, the student may be recommended for a special education evaluation, which is conducted by a special educator or school psychologist, with information gathered from teachers, other staff, families, and other professionals, depending on the type of assessment(s) needed. Once the evaluation is complete, the evaluator determines whether the student qualifies for special education services.

IDEA establishes 13 categories of disability that qualify a student for special education, and the federal government establishes broad eligibility criteria. States have some latitude to elaborate on those criteria. In Vermont, there are three "gates" used to determine whether a student qualifies for special education (VT AOE, 2018b). The first is to show that a student has an identified disability. The second is to determine whether there is adverse effect, i.e., the student's academic progress being hindered. Adverse

effect is shown if the student is in the bottom 15% of his/her peers, typically using grades and standardized test scores (Eller, 2017). The third is to show that the student cannot be fully served in the general classroom and needs specialized instruction (Eller, 2017).

It should be noted that while the rules for identifying children for special education are set at the state level, the interpretation and implementation is done at the local educational agency (LEA) level. In Vermont this is often either a district, which if it is large enough can be considered a supervisory union (SU), or a group of districts that work together as an SU. The analysis in this study is done at the SU level.

Schools must develop an Individualized Education Program (IEP) for each child with a disability who is identified for special education. An IEP is a legal document that outlines all special education services and other supports the student requires, all modifications and accommodations to be provided, and an overall description of the student's special education program (VT AOE, 2018b). Once the IEP is developed, the academic team, including classroom teacher(s) and special educator(s), meets with the family to review the results of the evaluation, the goals and supports set forth in the IEP, and set a timeline to meet and review the student's progress.

The federal IDEA states that to qualify for special education services, students' academic performance must be adversely affected. States can set their own parameters to measure whether a student is adversely affected. In Vermont, adverse effect is determined by performance in the bottom 15th percentile as compared to same age peers in the following skill areas: oral expression; listening comprehension; written expression; basic reading skills; reading comprehension; mathematics calculation; mathematics reasoning;

or motor skills (VT AOE, 2018b). The focus on academic adverse effect can result in overlooking other types of adverse effect, such as social difficulties and behavioral challenges. This "gate" also ignores the adverse effect, academic or otherwise, that one student with an ED, particularly one who acts out, becomes violent, or runs from the classroom, can have on other students (Bell et al., 2013).

Children whose struggles with emotional regulation and behavioral control interfere with their education may qualify for special education under the definition of emotional disturbance (U.S. DOE, 2018). Emotional disturbance – also known as emotional disability, disorder, or difficulty (ED) and emotional behavioral disturbance, disability, or disorder (EBD) (Kauffman, 2015) – is one of 13 categories of disability outlined in the IDEA.

Current federal law defines ED as a condition where a student has difficulty maintaining interpersonal relationships with peers and teachers; inappropriate types of behavior or feelings under normal circumstances; a general pervasive mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal and school problems (Heward, 2009) (Table 1). This definition was first proposed by Eli Bower in 1957 and became law in 1975 (Heward). It is notable that the federal definition is based on characteristics observable in the school setting, and does not attempt to determine underlying causes (Bower, 1982).

States that accept federal funding for special education programs from IDEA must adopt the federal definitions for disability. However, they have some discretion in determining eligibility criteria and, as a result, state definitions for emotional disturbance

vary according to the specificity and severity of a child's condition (Dragoo, 2020). Table

1 provides a side-by-side comparison between the federal definition and what is used in

Vermont. The bolded text shows where the VT definition differs from the federal.

Table 2.2

Federal and Vermont Special Education Definitions for Emotional Disturbance

Federal Definition	Vermont Definition
(Individuals with Disabilities Education Act (2004)	(Vermont State Board of Education Rules Series 2360 – Special Education Rules, 2018, pp 70-71)
Emotional Disturbance (ED) means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:	**Emotional Disturbance (ED)** means a condition **including schizophrenia**, exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance.

(i) .An inability to learn that cannot be explained by intellectual, sensory, or health factors.
 	
   (ii) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
 	
   (iii) Inappropriate types of behavior or feelings under normal circumstances
 	
   (iv) A general pervasive mood of unhappiness or depression
 	
   (v) A tendency to develop physical symptoms or fears associated with personal or school problems
	(1) **Characteristics of an emotional disturbance**:
	   (i) An inability to learn that cannot be explained by intellectual, sensory, or health factors.
	
	   (ii) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
	
	   (iii) Inappropriate types of behavior or feelings under normal circumstances.
	   (iv) A general pervasive mood of unhappiness or depression.
	
	   (v) A tendency to develop physical symptoms or fears associated with personal or school problems.

Emotional disturbance includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance	(2) **A student who is socially maladjusted shall not be considered to be emotionally disturbed unless he or she also meets the definition of emotional disturbance as set forth in subdivision** (1).
	A social maladjustment is a persistent pattern of violating societal norms, such as multiple acts of truancy, or substance or sex abuse, and is marked by struggle with authority, low frustration threshold, impulsivity, or manipulative behaviors.

	A social maladjustment unaccompanied by an emotional disturbance is often indicated by some or all of the following:
	    (i) Unhappiness or depression that is not pervasive;
	    (ii) Problem behaviors that are goal-directed, self-serving and manipulative;
	    (iv) (sic)Actions that are based on perceived self-interest even though others may consider the behavior to be self-defeating;
	    (iv) General social conventions and behavioral standards are understood, but are not accepted;
	    (v) Negative counter-cultural standards or peers are accepted and followed;
	    (vi) Problem behaviors have escalated during pre-adolescence or adolescence;
	    (vii) Inappropriate behaviors are displayed in selected settings or situations (e.g., only at home, in school or in selected classes), while other behavior is appropriately controlled; and/or
	    (viii) Problem behaviors are frequently the result of encouragement by a peer group, are intentional, and the student understands the consequences of such behaviors.

	(3) **The EPT shall obtain an opinion of a licensed psychologist or psychiatrist as to the existence of an emotional disturbance and its effect on the student's ability to function, based on the above criteria.**
	(4) **Upon determination of the existence of an emotional disturbance disability, the parent shall be informed of the availability of interagency coordination of services, as defined by 33 V.S.A. §4301 et seq.**

Bolded text shows where VT definition differs from the federal.

There is widespread disagreement about the definition of ED among legislators, educators, and clinicians. The federal definition of ED was first proposed by Eli Bower in the 1957 and became law in 1975. The definition was based on characteristics observable in the school setting, and did not attempt to determine underlying causes (Bower, 1982). The federal definition for ED states that a socially maladjusted child is not necessarily

emotionally disturbed unless the social maladjustment is due to an ED (US DOE, 2018).

Yet, many times, if not most of the time, the identification of students is based on socially

maladjusted behavior – quite a conundrum (Bower, 1982; Kehle et al., 2004).

In the approximately 60 years since the federal definition of ED was developed,

the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), the book of

standardized criteria used to diagnose mental illness, has undergone several modifications

and now is in its fifth revision (Hanchon & Allen, 2018). It should be noted that the

characterization of ED is not connected with specific diagnoses in any recent edition of

DSM (American Psychiatric Association [APA], 2013). Conversely, autism spectrum

disorder (ASD), also a separate category of disability in the IDEA which can be difficult

to diagnose, has a more precise IDEA definition and is found in the DSM with specific

criteria.

Applying the definition of ED when identifying a child for special education

relies on the professional judgement of local educators. There is no clear, objective,

standard test to determine that a child has an ED that qualifies him/her for special

education.

For instance, the federal definition of ED includes stipulations that are inherently

vague: "long period of time;" "to a marked degree;" and "satisfactory interpersonal

relationships" (IDEA, 2004). Vermont's definition includes some additional details, yet

some lack of specificity still exists (VT AOE, 2018, 2362.1). On the one hand, this lack

of specificity is necessary given the broad range of disorders and circumstances that

might qualify a student as emotionally disturbed under the law.

Similarly, Coutinho et al. (2000) suggest five areas of the federal definition that introduce imprecision in identifying children with ED: (1) incorporating "inability to learn" into the definition of ED creates an overlap with the category of "learning disability;" (2) "Inappropriate types of behaviors…" is imprecise in both meaning and scale; (3) "a tendency to develop physical symptoms…." leaves room for professional discretion; (4) "a general pervasive mood…" is also imprecise and equates unhappiness with depression, which minimizes the seriousness of clinical depression; and. (5) the circular reference between social maladjustment and ED – i.e. the federal definition indicates that a student with ED has an "inability to build or maintain satisfactory interpersonal relationships" then goes on to exclude children who are only "socially maladjusted" (pp. 264-265).

Vermont's definition provides some clarification regarding the behaviors a child who has social maladjustment not associated with ED might present. However, the descriptions could easily depict socially maladjusted behaviors exhibited by students who suffer from an ED (VT AOE, 2018, 2362.1). Both definitions offer significant room for interpretation. With this room for professional judgment comes the potential for variability in student identification standards and practices that can occur across and within states and districts.

Originally, the federal definition for ED included the word "serious," implying that students who struggle with ED are not considered serious and do not qualify for special education (Bower, 1982; Ryan, 2013). Other disabilities are not limited in this way. Bower postulates that political concerns entered into the picture when the law was

enacted; there was a fear that the schools and districts would object if the definition had

not been restricted because of the number of students who would fall into this category

(Bower).

Assessments Used to Identify Children with ED

Partially because of the disagreement regarding the definition, there is a lack of

uniformity both with which tools are used to identify ED, and with the interpretation of

the results of those tools. Hanchon and Allen (2013) indicated that the definition and

tools combine to create an inevitability of inconsistency. If the definition creates an

unstable foundation, it is impossible to develop specific measurements and stable score

cutoffs (Hanchon & Allen).

None of the most commonly used assessments, such as the Behavior Assessment

System for Children – Third Edition (BASC-3; (Reynolds & Kamphaus, 2015), The

Strengths and Difficulties Questionnaire (SDQ) (Goodman, 2015), the Screening Test for

Emotional Problems – Self-Report (Erford et al., 2012), or the Social Skills Improvement

System (SSIS) (Gresham & Elliott, 2008) were formulated using the federal criteria for

ED as it is operationally defined (Huscroft-D'Angelo et al., 2021). While they have been

used to diagnose a student as having an ED, there can be considerable difficulty in

determining whether the student meets the criteria under IDEA.

The Scales for Assessing Emotional Disturbance – Third Edition (SAED-3 RS

(Epstein et al., 2020) was designed to measure how well students function in the core

areas associated with ED as indicated in the federal definition: inability to learn;

relationship problems; inappropriate behavior; unhappiness or depression; and/or

physical symptoms and fears (Huscroft-D'Angelo et al., 2021). The SAED was not created to provide a psychological diagnosis, and assessments used in the process of diagnosis are not necessarily connected to the DSM, as mentioned in the discussion on Definition (above). Therefore, the most effective way to determine the supports needed for the student is to have both a diagnosis and a determination of how the student functions according to IDEA. The Behavioral and Emotional Rating Scale (Epstein, 2021) is a strength based assessment, which has been shown to help improve IEPs and develop interventions that build on a student's capabilities (Lambert et al., 2021).

Determining whether students have an ED and are suffering from an adverse effect is even more difficult in the lower elementary grades than in the higher grades. Diagnosis in pre-school is complex, and including an assessment of impairment can decrease the rate of identification (Serna et al., 2002). Academic discrepancies are more easily determined with older students as workload increases and content becomes more challenging. Students who are not socially and behaviorally ready for Kindergarten are more likely to be held back, require special education services or 504 supports, or be suspended or expelled in grades 1st through 4th (Bettencourt et al., 2018).

If schools can find ways to provide necessary supports for younger students, there may be students for whom it is feasible to avoid a disability classification and need for special education services when they are older. By definition, qualifying for special education indicates there has been an adverse effect on a student's education (IDEA, 2004).

Process for Identifying a Child with ED

The process for establishing whether a student suffers from ED is complex. In Vermont, a school psychologist evaluates the student using one or more standardized assessments, each with different foci and strengths/limitations, to evaluate students for ED. In addition to standardized assessment(s), the psychologist uses other tools, such as: Social Competency Checklist; Incomplete Sentences Task; clinical interview(s); parent interview(s); school staff interview(s); consultation with school-based outpatient therapists, school services clinicians, community therapists; and a developmental and medical history questionnaire (C. Zajan, personal communication, May 2018).

Once the assessments, interviews, and consultations are complete, the psychologist compiles a report and presents it to the EST or Special Education Team, who reviews the findings considering other data, such as grades, academic assessments, behavioral data, and office referrals. If the school psychologist determines there is an ED, the team decides whether the adverse effects suffered by the student are significant enough that s/he qualifies for special education services.

Despite, or perhaps because of, the variety of standardized assessments and other tools, along with a definition that lacks specificity, it is quite challenging to establish a diagnosis of ED. There is no distinct score cutoff above (or below) which one can definitively identify ED. The lack of agreement regarding behavioral presentations and the reliance on professional discretion exacerbates the situation (Hanchon & Allen, 2018). When students present with negative behaviors, their relationships with teachers are affected. The resulting difficulties can intensify mental health challenges and increase

absenteeism, therefore having a deleterious impact on the students' academic career (Hamre et al., 2007).

Summary

Both the federal and Vermont definitions of ED are subject to different interpretations. Therefore, one possible reason for variability in identification rates for students with ED rests with the procedures and resources available to diagnose ED (Eller, 2017). Assessments are less precise than those for medically-based disabilities and much of the determination depends on the professional judgment of educators (Hanchon & Allen, 2018).

Study Context and Overview

The focus for this study is elementary students in Vermont. An increasing number of young children are entering pre-school or lower elementary grades with significant challenges, many of which are associated with the opioid crisis and other difficult home circumstances (Kolbe & Killeen, 2017). Often, students who exhibit behaviors consistent with ED have faced adverse childhood experiences (ACEs) (Kerker et al., 2015).

Vermont Context

Vermont is a good site for this case study because of the high percentage of students identified as having an ED. Additionally, there is a lot of variability across districts, both in terms of the number of students identified as ED, and the population characteristics.

Nationally, since 2005, clinical diagnosis and treatment of mental health issues in children has also trended upward (Collishaw, 2015). Between 1990 and 2014 the number

of children aged three to five served under the Individuals with Disabilities Education Act of 2004 (IDEA) almost doubled; in Vermont, the number served increased 65%.

Between 2013 and 2016, there was a 38% increase of children in custody with the Vermont Department of Children and Families (Rex & Schatz, 2018), and the number of court cases pertaining to Children in Need of Care or Supervision (CHINS) increased 42%. In 2017, almost 63% of the children in custody age five or under were there because of substance abuse issues in the family, 80% of which are related to opioids (Rex & Schatz). Substance abuse in the home can result in a trauma response from children. Medical and educational professionals are learning more about the connection between trauma in childhood and future mental and physical health struggles, including that of emotional regulation (Redford, 2016).

The 2010 Vermont Behavioral Risk Factors Surveillance Survey (BRFSS) found that 57% of respondents reported at least one adverse childhood experience, with 42% of respondents reported at least two ACEs and 13% reporting four or more (Brosseau, 2012). In 2019, Vermont Care Partners and the Vermont Department of Mental Health collaborated to examine Adverse Family Experiences (AFEs), which are types of neglect and trauma a child may experience at home or in his/her neighborhood. AFEs include food or housing insecurity; violence in the home; parental divorce or separation; losing a parent to death or prison; living with an adult suffering from suicidal ideation or other mental illness; living with an adult with alcohol or drug problems; or experiencing neighborhood violence (Bailey, 2019). In Vermont, the most common AFEs are living with someone suffering from mental illness or drug/alcohol problem; food or housing

insecurity; and divorce. Additionally, Vermont data show that moving can be related to negative outcomes, and 17% of children have moved four or more times since birth. Thirty-three percent (33%) of those who have moved four or more times have three or more AFEs (Bailey, 2019).

Study Overview

The purpose of this descriptive study is to examine the extent to which there are systematic differences among Vermont school districts that explain variability in the share of children with disabilities identified with ED. Specifically, two questions guide my research:

(1) How much variability exists among Vermont supervisory unions and districts in the percentage of students identified for special education with ED?

(2) To what extent are there systematic differences in community, school and student characteristics that differentiate between Vermont supervisory unions and districts with the highest and lowest shares of students with ED?

Answering these questions holds promise for helping both policymakers and practitioners better understand the factors that delineate districts with higher and lower rates for identifying children with ED, with the goal of targeting policies, programs, and resources in ways that support appropriate identification and service delivery for students with ED.

The remainder of this thesis is organized as follows. In the next chapter, I review the literature on what is known about population-based, community, and school factors that account for differences in identification rates for special education, generally, and ED specifically. Chapter 3 describes the conceptual framework that guides the research

and the data and methods used to answer the thesis' questions. Chapter 4 presents the

study's findings, and the thesis concludes with a discussion of the findings and considers

their implications.

CHAPTER 2: REVIEW OF LITERATURE

In this section I review what is known about the factors that contribute to the variability in identification rates for special education, and for students with emotional and behavioral disorders specifically. Existing literature points to three broad sets of factors that may contribute to variability in identification rates for students with an emotional disturbance: (1) population-based predictors of disability in children; (2) state and local policies, practices, and resources for education; and (3) availability of services in the community.

Population-based Factors

The prevalence of children with disabilities in a school or community, generally, and children who are diagnosed with emotional disturbances specifically, are related to individual or family wealth, adverse childhood experiences (ACE), and adverse family experiences (AFE). It must be noted that children from all socio-economic strata can face abuse and neglect, and there are many causes for ED. Yet, the literature is clear; there is a powerful connection between poverty and a toxic level of stress that results in a trauma response (Goodman et al., 2012; Guarino & Bassuk, 2010; Miller et al., 2014; Rawles, 2010; Willis & Nagel, 2014).

In their 2017-2018 data, the National Survey of Children's Health found that the percentage of children with two or more ACEs decreased as household income increased. Families with incomes up to 399% of the federal poverty level showed significantly higher percentage of children with two or more ACEs (Health Resources and Services Administration's Maternal and Child Health Bureau, 2020). Because people who live in

poverty are less likely to have access to necessary mental health care, the effect of this stress is magnified (Wadsworth & Achenbach, 2005)

Poverty

Demographic characteristics of the surrounding community, such as socio-economic status, are associated with an increased need for special education services. Literature shows that we can look at student/family characteristics, particularly poverty, to predict the need for special education (Battistich et al., 1995; Flores, 2014; Marsden, 2013; Miller et al., 2014). This is not a new concept; Dunn (1968) connected the idea of poverty and family circumstances with students' needs for special education.

Adverse Childhood Experiences (ACEs) and Adverse Family Experiences (AFEs)

More recent literature expanded our understanding of some of the reasons why students require special education supports. We are becoming aware of the impact ACEs have when children are young, and throughout their lives (Anda et al., 2006; Kerker et al., 2015). Recognizing that increased stress in the household can lead to mental health issues, including ED in children, connects poverty and other difficult life circumstances with special education (Zeng & Hu, 2018). ACEs are not limited to lower-income households, yet poverty can be a predictor for ACEs because of the stresses created.

ACEs include physical, emotional, or sexual abuse, household dysfunction, and neglect (Campbell et al., 2016; Felitti et al., 1998). Household dysfunction covers a range of situations: (a) parental divorce or separation; (b) substance abuse; (c) mental illness or incarceration of a member of the household; or (d) violence, particularly against the child's mother or maternal figure. Neglect is defined by the U.S. Centers for Disease

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Control and Prevention [CDC] (2016) as an act of omission in which adults fail to provide for physical or emotional needs, prevent harm, or the potential for harm, and can be both physical and emotional.

Recognizing the long-term impact of adverse experiences on children is relatively recent. Over a two-year period, starting in 1995, the U.S. CDC and Kaiser Permanente, the non-profit integrated health care consortium based in Oakland, California, conducted the ACEs Study. Over 17,000 of Kaiser's Health Maintenance Organization (HMO) members answered questionnaires about their childhood experiences, current health, and behavior affecting health. It began as a study on obesity, and became the first, and one of the largest, to show the correlation between childhood experience and later health effects. The CDC periodically updates the morbidity (illness or injury) and mortality (death) data of study participants (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016) giving longitudinal data.

The study was the first to relate negative experiences in childhood to a variety of behavioral risks and health impairments in adults (*About the CDC-Kaiser ACE Study |Child Maltreatment|Violence Prevention|Injury Center|CDC*, n.d.). Some behaviors found include suicide attempts, promiscuity, smoking, overeating, drug and alcohol abuse, and self-harm (Redford, 2016). Increases in health problems and illnesses such as diabetes, depression, heart attack, stroke, chronic obstructive pulmonary disease (COPD), sexually transmitted infections, and cancer were also found (Redford).

It should be noted that these respondents were adults reporting incidents from their childhood. Current figures for children seem to confirm these results. Vermont data

from the 2011-2012 National Survey of Children's Health showed that approximately

60% of children in Vermont have experienced at least one adverse childhood experience.

While the percentages have remained consistent over recent years, it is important to

remember that the actual number of children affected increases with the increase in

population.

In 2019, Vermont Care Partners and the Vermont Department of Mental Health

collaborated to examine AFEs, which are types of neglect and trauma a child may

experience at home or in his/her neighborhood. AFEs include food or housing insecurity,

violence in the home, parental divorce or separation, losing a parent to death or prison,

living with an adult suffering from suicidal ideation or other mental illness, living with an

adult with alcohol or drug problems, or experiencing neighborhood violence (Bailey,

2019).

As mentioned above, ACEs information is gathered by asking adults about their

experiences as children. AFEs differ in they are asked of parents/guardians about children

in their care – not including questions about physical or psychological abuse. Abuse does

cause trauma; however, the information is not captured by asking parents/guardians

directly so it is not included in this report. In other words, the main difference between

ACEs and AFEs is the timing – AFEs are essentially ACEs happening to children now.

A 2015 study by Kerker et al. (2015) found 98.1% of children who had been

referred to child welfare services agency, and not removed from the home, had at least

one ACE. The study selected participants from baseline interviews from the National

Survey of Child and Adolescent Well-Being (NSCAW) II conducted with caregivers and

caseworkers of 5,872 children, newborn to 17.5 years of age, who had been referred to a child welfare agency for possible maltreatment.

The Kerker study coded the categories of ACE reported (regardless of substantiation), and collapsed them into the following five variables: (1) physical abuse of any kind; (2) sexual abuse of any kind; (3) emotional abuse of any kind; (4) any type of abandonment or neglect; and (5) any emotional neglect in the last year (Kerker et al., 2015, p. 511). Violence against the maternal figure, substance abuse by a member of the household, mental illness by a member of the household, parental divorce/separation, and incarceration of a member of the household were measured by caseworker or caregiver report, status of the caregiver at the time of the interview, or risk assessments given to the caregiver(s).

While 98.1% of the children experienced at least one ACE, the average number of ACEs was 3.6. This was a nationwide study of children who had been reported to child welfare agencies. Data explaining the percent of children exposed to ACEs among those who are in Vermont DCF custody is not available. It is fair to expect that the percentage of children exposed to ACEs and the associated number of ACEs be comparable, if not higher, for Vermont than those found by Kerker et al. (2015) using nationwide data. Given trends, it is not unreasonable to predict that both the number and percentage of children in Vermont affected by ACEs will continue to increase.

Nationwide the percentage of students experiencing homelessness has been increasing. In Vermont, the percentage seems to be holding steady. This is not necessarily a good sign. Two of the challenges with capturing this data are that children who are

experiencing homelessness might not attend school regularly and are therefore not counted as students. Another challenge is that families sometimes stay temporarily with a family member or friend, and then move to stay with someone else, may not be counted as homeless. Therefore, the actual number and percent are most likely higher than indicated (U.S. DOE, 2018).

ACEs are associated with an increase in both short and long term physical and mental health issues (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016). The ACE pyramid (Figure 2.1) from the CDC indicates the neurodevelopmental effect of ACEs can lead to social, emotional, and cognitive impairment.

According to the Lancet (Hughes et al., 2017) found that people with at least four ACEs had a higher risk of negative health outcomes. The odds ratios between ACEs and the risk of negative health outcomes were strong between sexual risk taking, mental illness, and problematic alcohol use, and strongest for problematic drug use and violent behaviors.

More recent definitions of ACEs expanded the concept beyond the household to include more community-based factors such as witnessed violence, felt discrimination, unsafe neighborhood, and experienced bullying. Additionally, the expanded definition includes living in foster care, which had been associated because foster care is often related to many of the issues within the home, and is now evaluated as creating its own challenge (Choi et al., 2020; Cronholm et al., 2015).

Figure 2.1

The ACEs Pyramid: Longterm Effects of Adverse Childhood Experiences
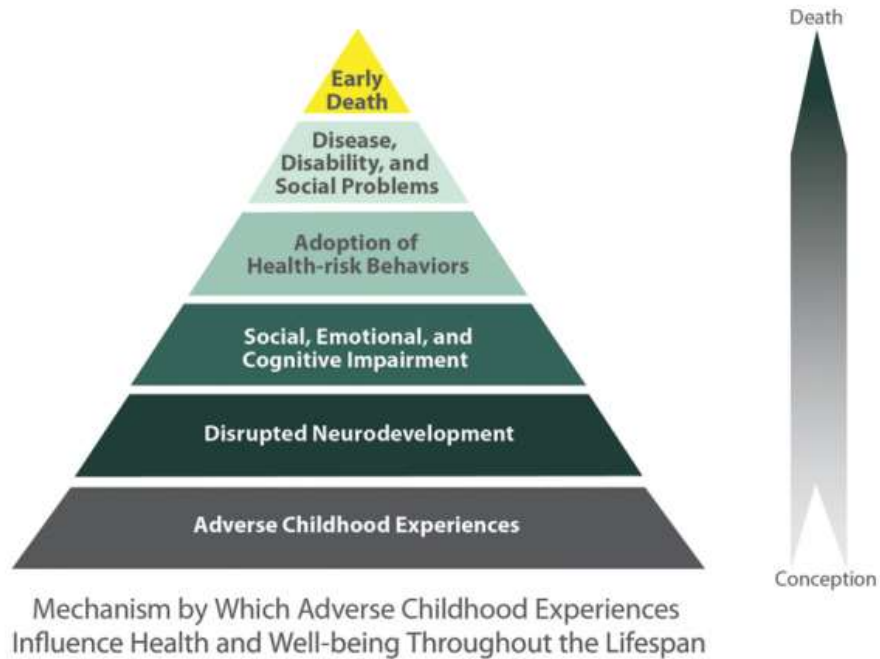
Mechanism by Which Adverse Childhood Experiences
Influence Health and Well-being Throughout the Lifespan

(*About the CDC-Kaiser ACE Study |Child Maltreatment|Violence Prevention|Injury Center|CDC*, n.d.)

The effects of adverse childhood experiences can present in schools in a variety of ways, as demonstrated in the following figure (Table 2.1).

Table 2.1

Effects of ACEs on Children's Behavior

Symptom Category	Symptoms	Classroom Examples
Physical	Recurring physical complaints, may be prompted by a similar occurrence	Repeatedly complaining of a stomachache, lightheadedness, headaches, or other sickness when a similar prompt is given (i.e., working in groups or when the weather is bad)
	Hyper-vigilance/heightened startle reaction; an above normal state of alertness	Constantly looking around the room, checking behind oneself; may appear to jump or be startled at small or everyday noises
	Sleep disorders/recurring nightmares; sleeping too much or not enough	Consistently coming late to class, appearing exhausted or lethargic, resting head on desk repeatedly throughout the day
	Weight change; sudden gain or loss of weight	Clothes appear extremely tight or loose, change in type of wardrobe (i.e., usually wears fitted clothes but begins to wear only loose-fitting clothes)
Behavioral	Regression: returning to previous developmental behaviors	Younger children may return to sucking thumbs, older children may regress to temper tantrums or exhibit extreme separation anxiety from caregivers
	Changes in play: play patterns shifting to repeated play behaviors, role playing of the traumatic event, or restriction of play	Child who normally plays freely with different toys now plays solely with the blocks (building and knocking them down again and again, or does not play and instead sits alone, or assigns roles to other children or dolls to play out event
	Social isolation: withdrawal from normal social network	Chooses to sit alone, does not talk to others during breaks, avoids social interactions; quitting extracurricular activities
	Risk-taking increase in behaviors that may cause harm to self or others	Hearing about child having unprotected sex, trying drugs, abusing alcohol
	Bids for attention: acting in a way to draw attention through negative or positive actions	Suddenly becoming an overachiever or underachiever, acting out to draw attention

	Increased aggression	Yelling, becoming upset quickly, inability to stop aggression
Emotional	Difficulty regulation emotions/easily angered: emotions are not consistent or lack of logical flow	Mood swings, easily angered or irritated
	Fear: phobias that may seem connected and apparent to trauma or not	Fear of the recurrence of the trauma (i.e., rape victim afraid she will be raped again), fearing that one may not be able to heal
	Stress	Late or not turning assignments, easily overwhelmed by new projects
	Distrust	Unwilling to work with partners or in groups, sitting apart from classmates
	Lack of self-confidence	Uncertainty in presenting knowledge verbally or in writing, lack of effort to believe that it will not be adequate
Cognitive	Inability to focus	Fidgeting, frequently glancing around the room, not completing assignments/ readings
	Learning disabilities/poor skill development	Patterns of learning problems become apparent, accompanied by other trauma symptoms
	Trauma flashbacks: involuntary visual, auditory, and/or sensory memories of the traumatic event	May not see flashbacks within classroom; however may see side effects such as low energy/motivation, lack of sleep, anxiety
	Dissociation: splitting off from current consciousness	Student appears to "blank out," poor memory, highly inconsistent work
	Changed attitudes about people in general, life, and the future	Expressions of how humanity is generally "bad," expectations that another trauma will soon follow, lack of planning for the future

(Bell et al., 2013)

Because the symptoms can manifest in so many ways, factors unrelated to those

that are population based can become part of the reason for the variation in percentages

of students identified as needing special education, particularly due to the lack of

specificity in definitions (Hanchon & Allen, 2013). When we consider definitional

ambiguity along with community, district, and school related factors, we see how the combination can have an impact on the identification and classification of students. Given the limited resources available to school, in both personnel/time, and money, it is challenging to appropriately identify students who have an ED and develop a plan of support. The best way to provide students with opportunities to succeed will almost certainly require assistance from outside the school.

Community and School Factors

Contributing factors can be found both in the community, and within the school. Community-based factors include the availability of mental-health services, access to health care providers, unemployment rate, food or housing insecurity, and median income.

Community-Based Services

The incidence of disability among children has been shown to be related to the availability of community mental health, general health, and social service supports. Two ways community-based factors contribute: (1) lack of availability of services to mitigate family stress and intervene when there are problems creates a higher likelihood of ACEs and AFEs; and (2) availability of personnel to identify and treat children with ED and other mental health issues. Lack of supports serves to increase the level of stress within the family, intensifying the need for supports, which further increases the level of stress (Bøe et al., 2012; Wadsworth & Achenbach, 2005). It should be noted that mental health challenges can exacerbate the difficulties faced by students with other disabilities (Kataoka et al., 2002).

Surjus and Campos (2014) conducted a literature review to address those who have dual diagnoses of intellectual disability and mental illness, which has been estimated to affect between 30% and 40% of those with an intellectual disability. While Surjus and Campos are based in Brazil, their review included international scholarship and they determined that public health policy must include protections for this population. A report produced by Human Systems and Outcomes, Inc. for the Florida Developmental Disabilities Council corroborates those findings (Putnam, 2009).

When community-based services are reduced, schools are forced to provide medical and mental health care, or students do without. Even if services are available, rural communities, and those that do not have a strong public transportation system, make it more difficult for families to access care if they do not have a reliable vehicle or flexible work schedules. Paradoxically, Slade (2003) found that rural schools were less likely to offer mental health services, and suggested this results from lack of funding and difficulty finding providers.

School-based Factors

Effective use of school resources is about the allocation of personnel, other assets, and money. Decisions regarding how limited funds are spent has a major impact on the value schools create (Gottfried, 2012). Economic scarcity can create problems that last long into the future. Students with mental health issues often miss school. Therefore, they do not develop the academic or social foundation they need to progress, their performance continues to drop, and the gap between their academic level and their expected performance increases as they get older (Bower, 1982).

Lack of money can cause schools/districts to develop IEPs based on the available resources, rather than the needs of the student. One administrator stated that the district required an IEP be rewritten to remove an individual aid a student needed and offer "access" to someone the student would share with several others, because there was no money to hire the required personnel (confidential, personal communication, 2016).

Targeted Funding

Funding sources and requirements can have other consequences. Medicaid often covers mental health services, and schools can access those funds when providing mental and physical health assistance. Schools generally cannot receive funding from other forms of insurance, which can lead to disparities in which the students who most need help may not be the ones who get it (Wadsworth & Achenbach, 2005).

Private funding is sometimes available for diagnoses. For example, if funding is available to help students identified as having a specific disability, schools may strive to categorize more students in that way to get funding. Mis-categorizing students so they can access services may help in one way; however, it creates other problems. As students get older, they may need different services which do not fit with the initial category (Kataoka et al., 2002). Statistics based on incorrect categories could lead to even more inequitable funding later (Cullen, 2003).

Building relationships with caring adults is an important part of all students' success. It is a critical aspect of the educational experience for students who need special education services, and those with mental health challenges (Artiles & Kozleski, 2016). A school must have an adequate number of appropriately trained personnel to ensure

adults have the time and space to build relationships and provide support for students (Gottfried, 2012). The challenges expressed by school personnel in a study by EAB (formerly the Educational Advisory Board) (2019) will inevitably affect relationships between faculty/staff and the struggling students. Therefore, teachers who are constantly dealing with disruptive behavior find it more difficult to relate to the students who exhibit this behavior who are most in need of a positive relationship.

School-wide Programs

Schools with an effective multi-tiered system of support, or other structural interventions, may be less inclined to identify students as needing special education (Barnes & Burchard, 2011). Implementing these types of targeted intervention may help avoid mis-identifying students who need additional support yet are not truly in need of special education services (Freeman et al., 2015). These structures must include appropriate identification of students, and special educators are an integral component of effective supports (Freeman et al.; Leko et al., 2015).

As class sizes increase, classroom teachers may find ways to remove troublesome students from their classes, rather than deal with their behaviors (Hamre et al., 2007). Ideally, teachers would have enough time to help all students who present with difficult behaviors; however, that is rarely the case (Bronstein et al., 2021). Frameworks such as Responsive Classroom (RC) and Positive Behavior Interventions and Supports (PBIS) rely on classroom teachers (Brackett et al., 2015; and classroom teachers cannot be successful without assistance from counselors and special educators, who are also overextended (Cressey et al., 2014).

In a 2019 study by EAB, teachers estimated losing approximately 2.5 hours of instructional time a week. Twenty-seven percent (27%) of teachers reported experiencing tantrums or defiance several times a week, and an additional 25% encounter that type of behavior several times a day. The majority of respondents indicated that there is a substantial increase in behavioral disruptions in early grades, including 81% of district administrators, 73% of teachers, and 60% of special educators (EAB, 2019). These disruptions affect not only the disruptive student, but also the other students in the class, and create additional stress on teachers and school staff (Bronstein et al., 2021).

The majority of EAB survey respondents recognize the effects of trauma and untreated mental health issues on student behavior. Furthermore, most teachers also indicate that inadequate playtime or recreation, changes in parenting, and overexposure to electronic devices play a significant role in student misbehavior (EAB, 2019). Clearly, not all students who misbehave could be classified as having an ED, and not all students with an ED externalize misbehavior. Still, given the negative effects of disruptive behavior on students and faculty, it is important for teachers and administrators to collaborate with families to help all students.

Families of a lower socioeconomic status (SES) may have a more difficult time attending meetings at school because of inflexible work schedules or lack of transportation. Teachers sometimes attribute this difficulty as an unwillingness to collaborate, which affects the teacher/student relationship and the teachers' perceptions of the students' ability (Hauser-Cram et al., 2003). Districts must commit resources to

supporting school/family partnerships to ensure that students who have been identified as having emotional and behavioral challenges get the help they need (Kim et al., 2013).

Combining Factors

Population, community, and school-based factors all affect disability identification, yet we know little about their relative weight because they have largely been considered separately. The conceptual model upon which this study is based brings a systems perspective to these factors and the impact on ED. The relationship between disability incidence and the availability of community supports has not been covered extensively in the literature, nor has the effect on school resources and student supports.

This study looks at the variability among districts of the share of students identified as having an ED. After looking at demographic factors that may be associated with ED, further analysis may provide insight into other factors.

CHAPTER 3: METHODS

The purpose of this study is to identify factors that explain differences among

Vermont supervisory unions and districts in the proportion of students identified for

special education with ED. I first examine the extent of variability among school districts

and use extant administrative data to investigate which student, school, and community

characteristics differentiate districts with the highest and lowest percentages of students

identified with ED. I then examine the correlations between district-level ED rates and

key community, district, and student factors and compare the characteristics of districts

where the percentage of students so identified with an ED is comparatively higher and

lower than statewide averages. Specifically, the study considers the following questions:

1. What is the share of students with an emotional/behavior

   disorder/emotional disturbance (EBD/ED)? How has this share of students

   changed over time?

2. How much variability in the percentage of students identified as having an

   emotional disturbance exists among Vermont supervisory unions?

3. To what extent are student, school, and community factors related to

   differences among Vermont school districts in the percentage of students

   identified as having an emotional disturbance?

4. What characteristics appear to differentiate districts with comparatively

   high and low percentages of students with emotional disturbance?

My inquiry was guided by the conceptual framework presented in Figure 3.1. This

framework identifies a range of student, district, and community factors that may

influence the share of students in a school district identified with an ED. Here, ideally,

the share of students identified by schools as having an ED should reflect the naturally

occurring percentage within the local community (Figure 3.1, Panel A). However, other

factors may cause the observed percentage to deviate from what naturally occurs in the

population – particularly, district and school policies, practices, and resources. Thus, the

percentage of students identified with an ED may vary across districts both due to

differences in the local population of students served as well as other non-population-

based factors. The presence or absence of this latter category of factors is the focus of this

study.

Figure 3.1

Understanding Variability in Share of Students Identified with Emotional Disturbance
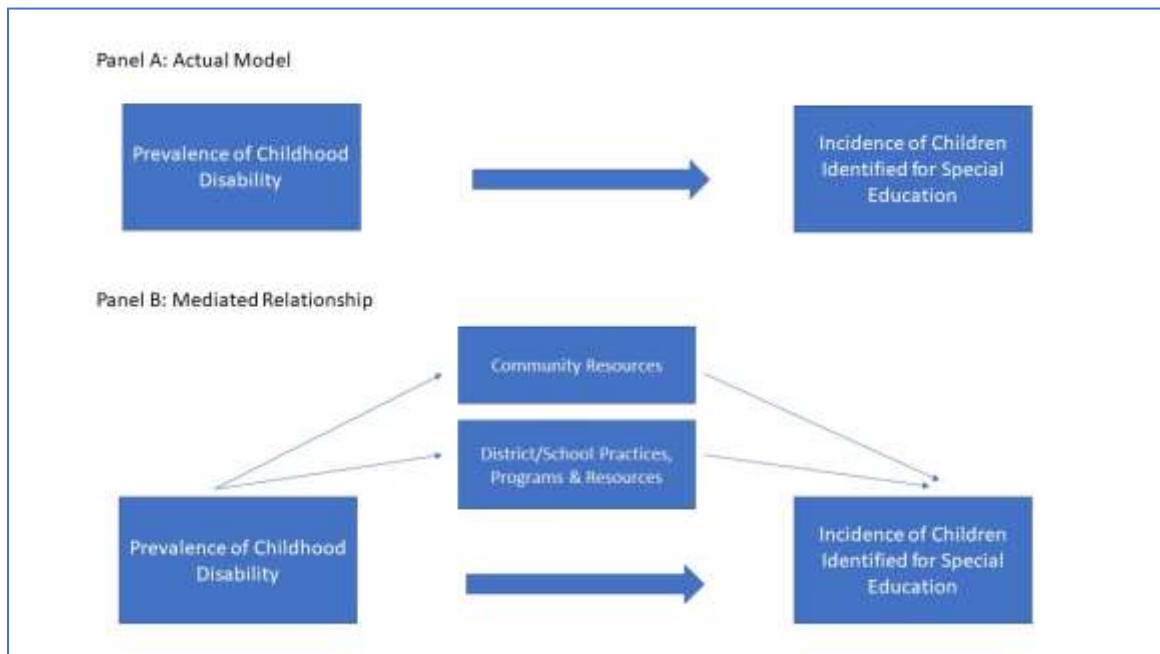
Data

The proposed study relies on administrative data collected by federal, state, and local education agencies. Table 3.1 summarizes the connections between selected data sources and research questions. I describe the data sources in further detail in the following sections.

Table 3.1

Research Questions and Associated Data

First Level Questions	Second Level Questions	Third Level Questions	Data
1. What is the share of students with ED? How has this share of students changed over time?	1 a. What has the trend in the % of students w/ED been in VT?	1a (a) How does the trend compare to overall % of students with IEPs?	2010+: % of students with IEP statewide, %
		1a (b)How does the trend in ED compare to LD?	2010 +: % of VT students categorized as LD;
2. What is the extent of variability in prevalence in children identified with emotional disturbance across Vermont School Districts?	How does the percentage of students identified with ED vary among supervisory unions?		% of students identified with ED by year, showing minimum, maximum, median, mean for supervisory unions, and mean for top and bottom quartiles.

First Level Questions	Second Level Questions	Third Level Questions	Data
3a. Are there differences in student demographic characteristics between supervisory unions with comparatively high and low percentages of students identified with emotional disturbance?	What characteristics of student population, supervisory union, and community are correlated with emotional disturbance?		Student Population& Supervisory Union Statistics: Student Population: • % FL • %RL • % IEP • %ELL Supervisory Union Attributes: • Special Ed teacher/student ratio • Overall teacher/student ratio • Per pupil spending • PBIS
3b. Are there differences in community characteristics between supervisory unions with comparatively high and low percentages of students identified with emotional disturbance?	Note: Are community factors connected with trauma related to percentage of students identified with emotional disturbance?		Community Factors by supervisory union: • Poverty rate • % Physical distress • % Mental distress • % Food insecure • % Disconnected youth • % Uninsured • % Unemployment • % SNAP • % Single mothers • SES composite • Median Income

First Level Questions	Second Level Questions	Third Level Questions	Data
4. To what extent do student, school, and community factors explain differences among Vermont supervisory unions in the percentage of students identified as having an emotional disturbance?	.		Compare student, school, and community factors between supervisory unions in top and bottom quartiles.

Administrative Data

The unit of analysis was Vermont school districts. Information about each district was derived from administrative data provided by the Vermont Agency of Education (AOE) for the 2008-2017 academic years. For each year, I merged additional information about school districts and the communities in which they are located from the U.S. Department of Education National Center for Education Statistics' Common Core of Data (CCD) and the Educational Opportunity Project at Stanford University and housed in the Stanford Educational Data Archive (SEDA) (Reardon et al., 2021). Additionally, I collected county-level health and income information County Health Rankings (University of Wisconsin Population Health Institute, 2020) and merged this information with districts, using a crosswalk between U.S. Census Bureau identifiers for county and school districts. I also appended information to each record for whether a district implemented PBIS in its elementary schools (*Home - Welcome to Vermont PBIS - Burlington*, n.d.).

Measures

Table 3.2 lists the specific data elements, by data source, that were used in my

analysis. Selected data elements are intended to be proxies for student, district, and

community factors that may differentiate between districts with the highest and lowest

shares of students identified with ED. Specifically, Table 3.2, Column 1 identifies the

category of interest from my conceptual model, Column 2 gives the specific variable that

will be used in my analysis, Columns 3, 4, 5 and 6 list the data source, and Column 7

provides the variable name. PBIS information was gathered from pbisvermont.org and

the variable developed.

Table 3.2

Data Sources and Variables

	Data	VT AOE	Stanford Education Data Archive (SEDA)	County Health Rankings	Variable Name
Student Attributes	Percent of students who qualify for free or reduced lunch		X		perfl
	Percent of students classified as Special Education	X	X		perspeced
	Percent of students classified as ELL		X		perell
Supervisory Union Attributes	Special education teacher/student ratio	X			SpEdTeachFTE/tot_swd_first
	Overall teacher/student ratio	X			SpedParaFTE/tot_swd_first

	Per pupil spending per disctrict	X		budget_pp_mean
	PBIS from pbisvermont.org			PBIS Y=1
Community Attributes	Poverty rate	X		povertyall
	Unemployment Rate	X		unempall
	SNAP rate	X		snapall
	% of households headed by a single mother	X		single_momall
	SES composite	X		sesall
	Percent of population citing physical distress		X	pct_physdistress_county
	Percent of population citing mental distress		X	pct_mentdistress_county
	Percent uninsured		X	pct_uninsured_county
	Percent of disconnected youth		X	pct_disconnectedyouth_county
	Median household income		X	medianhhincome_county
	Percent food insecure		X	pct_foodinsecure_county

Factors were selected based on the literature reviewed and my own experiences working in schools as a teacher and administrator. Student factors reflect the neighborhood and community factors, however because there are supervisory unions that offer families choices of schools, there are differences. One would expect the percentage of special education students to correlate with the percentage of students identified as having an ED. I used ELL as a factor because Vermont is a refugee resettlement state and

there are several supervisory unions in which a significant number of ELL students are refugees, or children of refugees, and have a trauma history.

Table 3.3 presents a matrix of correlation coefficients for all variables included in my analysis for the most recent three years. I checked correlations among variables to better understand the extent to which individual variables were independent of one another. Education per pupil spending was negatively correlated with student/teacher ratio ($r=-0.163$) and the percent of students receiving free lunch ($r=-0.185$). It is also negatively correlated with the percent of special education students ($r=-0.117$) although not significantly so, suggesting that schools with a larger percentage of students receiving special education services are still spending less per pupil.

Many community factors are highly correlated with each other as well as with student attributes. This affirms that (1) district student populations reflect the characteristics of the communities in which districts are located; and (2) that the multiple measures for community characteristics, particularly indicators of distress and disadvantage, may be describing similar underlying conditions. Each of the measures of community distress is related to a different adverse child experience, and the SES composite incorporates several of those experiences. The data is consistent with the expanded literature around ACEs illustrating that community factors can have an impact on children.

Table 3.3

Correlations Among Selected Measures

Correlations

		percent free or reduced lunch in the district	Student: Teacher Ratio	% of all Students in District that are ELL	% of all Students in District that are Special Ed	edspend_pp_mean	pct_physdistress_county2018_mean	pct_mentdistress_county2018_mean	pct_foodinsecure_county2018_mean	pct_uninsured_county2018_mean	pct_disconnectedyouth_county201_mean	medianhhincome_county2018_mean	StudentSpEdTeachRatio	StudentSpEdParaRatio	ses composite, eb estimate, all families, time-varying
percent free or reduced lunch in the district	Pearson Correlation	1	-.523**	0.034	.503**	-.147*	.469**	.468**	.339**	.403**	.522**	-.504**	0.116	0.115	-.832**
	Sig. (2-tailed)		0.000	0.621	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.157	0.166	0.000
Student: Teacher Ratio	Pearson Correlation	-.523**	1	0.073	-.337**	-.163*	-.463**	-.391**	-.237**	-.402**	-.501**	.576**	-0.132	-0.133	.377**
	Sig. (2-tailed)	0.000		0.313	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.086	0.000
% of all Students in District that are ELL	Pearson Correlation	0.034	0.073	1	-0.043	0.009	-.292**	-.286**	-0.056	-.260**	-.330**	.350**	-0.088	-0.089	-.200**
	Sig. (2-tailed)	0.621	0.313		0.534	0.901	0.000	0.000	0.433	0.000	0.000	0.000	0.288	0.281	0.006
% of all Students in District that are Special Ed	Pearson Correlation	.503**	-.337**	-0.043	1	-0.117	.238**	.330**	0.097	.187**	.375**	-.275**	0.124	0.085	-.491**
	Sig. (2-tailed)	0.000	0.000	0.534		0.102	0.001	0.000	0.178	0.009	0.000	0.000	0.133	0.307	0.000
edspend_pp_mean	Pearson Correlation	-.147*	-.163*	0.009	-0.117	1	0.084	0.048	-0.004	.207**	0.061	-0.128	-0.023	-0.027	0.143
	Sig. (2-tailed)	0.040	0.015	0.901	0.102		0.208	0.475	0.947	0.002	0.366	0.054	0.760	0.728	0.063
pct_physdistress_county2018_mean	Pearson Correlation	.469**	-.463**	-.292**	.238**	0.084	1	.857**	.639**	.843**	.853**	-.781**	0.072	0.091	-.267**
	Sig. (2-tailed)	0.000	0.000	0.000	0.001	0.208		0.000	0.000	0.000	0.000	0.000	0.344	0.233	0.000
pct_mentdistress_county2018_mean	Pearson Correlation	.468**	-.391**	-.286**	.330**	0.048	.857**	1	.635**	.751**	.913**	-.780**	0.148	.176*	-.268**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.475	0.000		0.000	0.000	0.000	0.000	0.052	0.021	0.000
pct_foodinsecure_county2018_mean	Pearson Correlation	.339**	-.237**	-0.056	0.097	-0.004	.639**	.635**	1	.687**	.522**	-.612**	.186*	.215**	-.170*
	Sig. (2-tailed)	0.000	0.000	0.433	0.178	0.947	0.000	0.000		0.000	0.000	0.000	0.014	0.005	0.026
pct_uninsured_county2018_mean	Pearson Correlation	.403**	-.402**	-.260**	.187**	.207**	.843**	.751**	.687**	1	.734**	-.709**	.260**	.276**	-.185*
	Sig. (2-tailed)	0.000	0.000	0.000	0.009	0.002	0.000	0.000	0.000		0.000	0.000	0.001	0.000	0.015
pct_disconnectedyouth_county201_mean	Pearson Correlation	.522**	-.501**	-.330**	.375**	0.061	.853**	.913**	.522**	.734**	1	-.842**	0.089	0.098	-.268**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.366	0.000	0.000	0.000	0.000		0.000	0.250	0.203	0.000
medianhhincome_county2018_mean	Pearson Correlation	-.504**	.576**	.350**	-.275**	-0.128	-.781**	-.780**	-.612**	-.709**	-.842**	1	-0.087	-0.105	.329**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.054	0.000	0.000	0.000	0.000	0.000		0.257	0.172	0.000
StudentSpEdTeachRatio	Pearson Correlation	0.116	-0.132	-0.088	0.124	-0.023	0.072	0.148	.186*	.260**	0.089	-0.087	1	.979**	-0.055
	Sig. (2-tailed)	0.157	0.085	0.288	0.133	0.760	0.344	0.052	0.014	0.001	0.250	0.257		0.000	0.529
StudentSpEdParaRatio	Pearson Correlation	0.115	-0.133	-0.089	0.085	-0.027	0.091	.176*	.215**	.276**	0.098	-0.105	.979**	1	-0.052
	Sig. (2-tailed)	0.166	0.086	0.281	0.307	0.728	0.233	0.021	0.005	0.000	0.203	0.172	0.000		0.556
ses composite, eb estimate, all families, time-varying	Pearson Correlation	-.832**	.377**	-.200**	-.491**	0.143	-.267**	-.268**	-.170*	-.185*	-.268**	.329**	-0.055	-0.052	1
	Sig. (2-tailed)	0.000	0.000	0.006	0.000	0.063	0.000	0.000	0.026	0.015	0.000	0.000	0.529	0.556	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

A district's student-teacher ratio is negatively related with percentages of students

receiving free or reduced price lunch in a district (r=-0.523); percentage of students

identified as special education (r=-0.337); per pupil spending (r=-0.163); percentage of

individuals experiencing physical (r=-0.463) and mental (r=-0.391) distress in a

community; food insecurity (r=-0.237); percentage uninsured (r=-0.402); and the

percentage of disconnected youth (r=-0.501). The student-teacher ratio is significantly

positively correlated with median income (r=0.576) and has PBIS (r=0.210).

Percent of people expressing physical and mental distress in the community are

highly correlated with each other (r=0.857); in addition, both being significantly

correlated with food insecurity, uninsured, and disconnected youth. Median income is

negatively correlated with free or reduced lunch (r=-0.401), percent special education

(r=-0.275), physical (r=-0.781) and mental distress (r=-0.780), food insecurity (r=-0.612),

percent uninsured (r=-0.709) and disconnected youth (r=-0.842). Median income has a

significant positive correlation with PBIS (r=0.244).

The SES composite is compiled by the Stanford Education Data Archive (SEDA)

from the U.S. Census Bureau's American Community Survey (ACS). It uses six

characteristics to develop a composite measure of SES in a community: median income;

percentage of adults age 25+ with a BA or higher; poverty rate of households with

children age 5-17; percentage of households receiving SNAP benefits; percentage of

households headed by single mothers; and the employment rate for adults aged 25-64

(Reardon et al., 2021). SES is highly positively correlated with student/teacher ratio

(r=.377) and median income (r=.329). It is negatively correlated at the two-tailed .01

level with percent free or reduced lunch (r=-.832), percent of students who are ELL (r=-.200), percent of students who are receiving special education services (r=-.491), percent of people in the community who experience physical (r=-.267) or mental (r=-.268) distress, percent of disconnected youth in the community (r=-.268). SES is negatively correlated at the two-tailed .05 level with percent of people in the community experiencing food insecurity (r=-.170), percent of uninsured in the community (r=-.185). There is significant duplication between SES composite and other criteria listed, so it is expected that there would be similarities in the correlations.

     I retained all the measures listed in Table 3.3 for the descriptive analyses presented in this thesis; however, as noted in the paper's discussion, future research that uses multivariate analyses may benefit from constructing composite measures using multiple variables.

Detailed Description of Methods

     Extant administrative data were analyzed to create a statewide descriptive profile of the variability among school districts in the share of students identified with an ED and identify factors that differentiate districts with comparatively high and low shares of students categorized as having an ED. A more detailed description of the methods used to accomplish these tasks is outlined in the sections below.

Statewide Descriptive Profile of Variability Among School Districts

     Using statewide data, I looked at trends in Vermont in the overall share of students with IEPs for the 2009-2017 school years, along with the percentage of those identified for special education with ED.

I then examined the extent of variation among Vermont supervisory unions and districts in ED identification rates. Descriptively, I calculated the minimum, maximum, mean, median, variance, and range for the share of students who qualify for special education under ED.

I calculated bivariate correlation coefficients for the relationship between the percentage of ED in a supervisory union and districts and the various student, school, and community characteristics. This was done to explore whether there was a general relationship between district level ED rates and population, community, and school factors for the universe of Vermont supervisory unions and districts.

Finally, I divided up Vermont supervisory unions according to quartiles based on the percentage of students identified as having an ED. Districts were assigned to a quartile for each academic year from 2008-2017. I then identified a subset of supervisory unions that had consistently high or low ED identification rates, based on whether they were in the top or bottom quartile for the most recent three years of data. For the three years, there were three districts consistently in the lowest quartile, six in the highest for student factors, and eight in the highest for community and school-based factors. I calculated the mean response for each variable of interest (population, community, and school) for the subset of supervisory unions identified in the top and bottom quartiles. I tested for mean differences between the two groups (Q1 vs Q4) using t-tests for student factors, school factors, and community factors as outlined in Table 3.2.

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Study Limitations

This study is the first step in getting a better understanding of the factors involved in identifying students who could benefit from special education services, determining whether those students qualify, and defining their category(ies) of disability(ies). This is a complex issue, and there are myriad tangible and intangible elements to consider. An overarching issue is that of the stigma associated with mental health challenges.

Using a pairwise analysis gives a picture of each individual factor, but it does not tell us the independent relationship, controlling for other factors, how factors might interact with one another. Future research should incorporate multivariate statistical approaches to look at multiple factors simultaneously while parsing out other information.

It is difficult to determine the percentage of people who struggle with ED challenges in the community at large. We can use demographic data and descriptive statistics to estimate. It is outside the scope of this study to consider how to best provide additional support to those in the community who would benefit. Since available information most likely provides an underestimation, further research could be valuable.

It is also difficult to get a clear picture of the availability of community resources. Students attending schools in a supervisory union located in an area with a strong network of medical and mental health providers may have more options for diagnosis and treatment. In this study I used variables associated with community resources as a proxy; however, future research could look in more depth at the relationship between the

availability of community resources and the percentage of students identified as having an ED.

Students who struggle with ED present in numerous ways, some of which are not as apparent as others. Often, teachers are not as quick to recommend a student for evaluation when s/he becomes quieter or withdraws as when s/he becomes disruptive because the change is not as obvious. Therefore, it is likely that the percentage of students so identified is lower than the actual number of students.

IEPs are often written considering resource limitations along with the needs of the student. Generally, administrators and special educators are unwilling to admit this fact to outsiders, although many educators have had that experience. Given the legal ramifications and costs associated with developing an IEP and providing the needed supports, it is likely that there are students who could qualify yet are not recommended for evaluation.

The National Association of School Psychologists (NASP) (2005) states that students with EDs are under-identified in schools. This study outlines some of the reasons for this under-identification such as imprecise definition, limited resources, and stigma surrounding ED. It is outside the scope of the study to determine ways to address those reasons; however, this is an avenue for future research.

The study focuses on Vermont, which has both a high statewide average and a large variability among districts of students identified as having an ED. There are other attributes of Vermont, such as the small population, the relatively low minority populations, and the rural nature of many of the districts. It is not clear how well these

results will translate to states with more population and urban districts. Another

characteristic related to Vermont's low population is the sample size will be small.

Finally, the results will not explain exactly why or how the share of students with

ED is affected. This study is exploratory, intended to help bolster our understanding of

factors that might contribute to the identification and classification of students, and

consequently, the variability among districts. The findings will not show causality.

CHAPTER 4: FINDINGS

Trends in ED Identification Rates

Tables 4.1a and 4.1b present the national and state trends in the percentage of children identified for special education with ED. Vermont identifies children with ED at a rate higher than the national average. This is true both as a percentage of all students and as a percentage of students served by the IDEA (Kolbe & Killeen, 2017). Additionally, the share of students identified for special education with ED in Vermont has increased over time, moving from 2.34% of the school-aged student population in FY2010 to 3.06% for FY2018.

Table 4.1a

Percentage of Students with Emotional and Behavioral Disorders (Ages 6-21), Fiscal Years 2010-2018 *

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
National	0.95%	0.92%	0.89%	0.86%	0.85%	1.08%	1.09%	1.06%	1.12%
Vermont	2.34%	2.40%	2.49%	2.58%	2.66%	2.61%	2.78%		3.06%
Delaware	0.60%	0.62%	0.63%	0.57%	0.61%	0.67%	0.75%	0.83%	0.91%
Kentucky	0.85%	0.82%	0.78%	0.78%	0.73%	0.72%	0.74%	0.74%	0.75%
Maine	1.47%	1.43%	1.40%	1.35%	1.34%	1.37%	1.38%		1.44%
Massachusetts	1.61%	1.61%	1.65%	1.68%	1.71%	1.74%	1.80%	1.88%	1.96%
New Hampshire	1.27%	1.28%	1.26%	1.25%	1.26%	1.26%	1.24%	1.24%	1.29%
Rhode Island	1.70%	1.63%	1.56%	1.38%	1.33%	1.26%	1.21%	1.24%	1.24%
South Dakota	0.97%	1.00%	0.98%	0.92%	0.93%	0.92%	0.95%	0.96%	0.98%

* As a percentage of Vermont's average daily attendance (ADA) in a given year.

Table 4.1b

Percentage of Students with Emotional and Behavioral Disorders (Ages 6-21), Fiscal

Years 2010-2018 *

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
National	7.1%	6.8%	6.65%	6.4%	6.3%	7.9%	7.9%	7.6%	7.8%
Vermont	15.37%	15.56%	16.03%	16.34%	16.61%	16.23%	16.60%		17.36%
Delaware	4.30%	4.27%	4.40%	4.05%	4.18%	4.39%	4.89%	5.04%	5.34%
Kentucky	6.02%	6.05%	5.91%	5.80%	5.50%	5.38%	5.35%	5.18%	5.15%
Maine	8.83%	8.63%	8.22%	7.86%	7.74%	7.70%	7.57%		7.57%
Massachusetts	9.19%	9.24%	9.45%	9.62%	9.74%	10.00%	10.21%	10.49%	10.70%
New Hampshire	8.54%	8.62%	8.40%	8.25%	8.33%	8.27%	8.08%	7.93%	7.98%
Rhode Island	10.00%	9.73%	9.52%	8.72%	8.46%	7.95%	7.76%	7.86%	7.71%
South Dakota	7.19%	7.42%	7.22%	6.76%	6.74%	6.50%	6.54%	6.49%	6.46%

* As a percentage of children statewide identified for special education in a given year.

The percentage of students identified as special education with an ED also increased between academic years 2010 and 2018, from 15.37% to 17.36%. When we look at both neighboring states and states selected for their smaller populations and rural nature, we find the percentage of students identified as having an ED in Vermont is still much higher. This is true both as a percentage of all students and a percentage of students identified for special education. The trend among all states, including Vermont, appears to be increasing.

The statewide average percentage of students identified for special education with ED is higher than the district average percentage. This suggests that some districts in the state have much lower percentages of students identified for special education with ED than the statewide average. For instance, in 2017, the percentage of children identified for special education with ED ranges from 2.6% to 31.7%, for the districts with the smallest

and largest shares. Additionally, while there has always been substantial variability in ED

rates among Vermont districts, the range in ED rates has widened in recent years (Table

4.2). In 2017, the percentage of students with IEPs identified as having an ED in a district

ranged from 2.6% to 31.7%, a difference of nearly 30 percentage points between the

districts with the largest and smallest shares of special education students with ED. While

there has been substantial variability across districts, the range seems to be increasing in

recent years, after a drop from 31.7% in 2015 to 25.7% in 2016, it increased to 29.1% in

2017.

Table 4.2

District Average Percentage of Students with Emotional and Behavioral Disorders

(Ages 6-21), Fiscal Years 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Min	0.00	0.00	0.00	6.50	5.70	2.90	6.30	3.20	3.00	2.60
Max	27.30	26.00	25.20	26.40	29.00	25.90	27.80	34.20	28.70	31.70
Mean	13.84	13.71	13.42	13.10	13.39	13.88	14.23	14.15	13.65	14.01
Mean for Lowest Quartile	8.35	7.82	8.42	8.23	8.33	8.37	8.84	8.60	8.47	8.45
Mean for Highest Quartile	19.43	19.94	18.50	18.32	19.42	20.37	21.06	21.38	19.80	20.54
Median	13.60	13.39	13.77	12.95	13.07	12.90	13.41	13.33	13.06	13.84
Range	27.27	26.02	25.19	19.94	23.23	22.93	21.49	31.02	25.71	29.10

Taken as an average of district percentages

Relationships Between District ED Rates and Community and School Characteristics

Table 4.3 presents correlations between the percentage of students identified for

special education with ED and the attributes of the students enrolled in Vermont school

districts. There is a positive relationship, albeit moderate, between the average share of

students identified with ED in a district and the percentage of students attending a district

who are economically-disadvantaged (r=0.213). Similarly, there is a positive relationship

between the percentage of ELL students enrolled in a district and the percentage of

students identified with ED in a district (r=0.385). The percentage of students in a district

who are identified for special education is also positively associated with the share of

students identified with ED (r=0.208). The correlation between the percent of students

who receive free or reduced lunch and percent of students identified as having an ED is

not statistically significant.

A histogram showing the prevalence of students identified as having an ED for

2017 can be found in Appendix A. There appears to be a near normal distribution

throughout the state.

Table 4.3

Correlation Between Student Factors and Percentage of Students Identified as Having

an Emotional Disturbance

	District	Percent of students receiving free or reduced lunch	Percent classified as ECD	Percent of all students that are ELL	Percent of all students receiving Special Education
ED	Pearson Correlation	0.116	.213[**]	.385[**]	.208[*]
	Sig. (2-tailed)	0.161	0.010	0.000	0.011
[**]. Correlation is significant at the 0.01 level (2-tailed).					
[*]. Correlation is significant at the 0.05 level (2-tailed).					

Table 4.4 presents the relationships between district-level ED rates and measures

for the characteristics of the students that attend school in the district and district

organization and composition. Of the characteristics, only the relationship between

whether a district operates PBIS and its ED rate is statistically significant. Interestingly,

however, the relationship is positive (r=0.213) – i.e., districts with higher rates of ED

identification are also more likely to implement PBIS. The reason for the direction of this

relationship is unclear. For instance, it could be that districts with a large percentage of

students presenting with symptoms of an ED implement PBIS to help those students.

Alternatively, districts that have PBIS are more likely to diagnose and identify students

who have an ED.

A scatterplot matrix of these correlations can be found in Appendix A. The only

two characteristics that appear to have a linear relationship are the percent of students

who are economically disadvantaged and the percent of students receiving free or

reduced lunch. There appears to be a loose linear relationship between students who are

receiving special education services and the percent of students receiving free or reduced

lunch.

Table 4.4

Correlation Between District Characteristics and Percentage of Students Identified as

Having an Emotional Disturbance

		Student: Teacher Ratio	Education Spending Per Pupil	Student/ Special Education Teacher Ratio	Student/ Special Education Paraeducator Ratio	Has PBIS (Yes=1)
ED	Pearson Correlation	0.073	-0.070	-0.007	-0.026	.213[**]
	Sig. (2-tailed)	0.348	0.362	0.932	0.733	0.006
[**]. Correlation is significant at the 0.01 level (2-tailed).						
[*]. Correlation is significant at the 0.05 level (2-tailed).						

Table 4.5 presents correlations for the share of students identified for special education with ED in a district and a broad range of community attributes. Somewhat unexpectedly, I find negative, and moderate in strength, relationships between the percentage of population expressing physical (r=-0.418) or mental (r=-0.331) distress, and the percentage uninsured (r=-0.340) and the percentage of students identified as having an ED in a school district. Similarly, there is also a negative (moderate in strength) relationship between the percentage of disconnected youth (r=-0.361) in a community and the share of students identified for special education in a district with ED. There is a negative relationship between the SES of the community in which a district is located (r=-0.284), despite past research suggesting that a relationship between SES and ACES (Costello et al., 2001; Major Findings Adverse Childhood Experiences (ACE) Study, 2014; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016 (Costello et al., 2001; *Major Findings Adverse Childhood Experiences (ACE) Study*, 2014; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016). However, there were positive relationships, of moderate strength, between the percentage of students identified with ED in a district and the poverty rate (r=0.291), SNAP receipt rate (r=0.254), and percentage of single mother headed families (r=0.308) in a community. This fits with research connecting ACEs/AFEs with negative health effects.

Table 4.5

Correlation Between Community Factors and Percentage of Students Identified as Having an Emotional Disturbance

		SES Composite	Poverty Rate	Unemploy-ment Rate	SNAP receipt rate	Single mother headed households	Percent experiencing physical distress	Percent experiencing mental distress	Percent food insecure	Percent uninsured (health insurance)	Percent disconnected youth	Median Income
ED	Pearson Correlation	-.284**	.291**	-0.008	.254**	.308**	-.418**	-.331**	-0.147	-.340**	-.361**	.350**
	Sig. (2-tailed)	0.001	0.001	0.931	0.004	0.000	0.000	0.000	0.055	0.000	0.000	0.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix A shows a scatterplot matrix of the above district/supervisory union characteristics. Aside from the linear relationships between district enrollment and average per grade enrollment, and a looser relationship between student/teacher ratio and average per grade enrollment, or district enrollment, there do not appear to be linear relationships between the other characteristics.

Comparisons Between Districts with Consistently High and Low Rates of ED Identification

Table 4.6 compares student factors for districts in the top and bottom quartiles for ED identification rates during the past three years. There is no statistically significant difference in the share of students receiving free or reduced-price lunch between districts with the consistently largest and smallest shares of students with ED, for the past three years. Similarly, while on average, districts with larger shares of students identified with ED have a higher percentage of students identified for special education (16.2% vs. 15.2%), the differences were not statistically significant at conventional levels (p=0.257). Nor was the difference significant at conventional levels (p=0.485) in the percent of students identified as being economically disadvantaged (49.9% vs. 50.4%).

The independent sample test does not have enough data to show the relationship between the number of students who are ELL. There are many SUs in Vermont who have few or no students for whom English is not their primary language. While we saw there is a correlation between the percentage of students who are ELL and the percentage of students identified as having an ED, it appears that ELL students are not clustered in either the highest or lowest quartile.

A scatterplot matrix of community based characteristics can be found in

Appendix A. There are moderate linear relationships between the following

characteristics: single mother headed households and SNAP receipt; single mother

headed households and poverty rate; poverty rate and SNAP receipt, and poverty rate and

unemployment rate. None of the other scatterplots indicate linear relationships.

Table 4.6

Comparison Between Districts with the Largest & Smallest Shares of Students with

ED, Student Characteristics (2014-2017)

Factor	Overall Mean - All Districts Statewide		Mean	One- Sided p
% Free or Reduced Lunch	0.414	Q1	0.505	0.338
		Q4	0.463	
% of all Students in District that are Special Ed	0.1586	Q1	0.152	0.257
		Q4	0.162	
% of students in district who are economically disadvantaged	0.4140	Q1	0.499	0.485
		Q4	0.504	

Table 4.7 compares school district attributes for districts in the top and bottom

quartiles for ED identification rates during the past three years. On average, districts with

higher ED identification rates had higher overall student-to-teacher (10.9% vs. 9.77;

$p=0.129$) but had lower student-to-special education (0.25 vs. 0.40; $p=0.251$) and -

paraeducator ratios (.68 vs. 1.35; $p=0.199$). This suggests that districts with larger shares

of ED students, on average, may have fewer instructional resources for students.

Interestingly, however, were no statistically significant differences between supervisory

unions in the top and bottom quartiles for ED identification rates according to district per

pupil spending. Similarly, there was no statistically significant difference between district

groups on whether PBIS was implemented in schools.

Table 4.7

Comparison Between Districts with the Largest & Smallest Shares of Students with

ED, District Attributes (2014-2017)

Factor	Overall Mean - All Districts Statewide		Mean	One-Sided p
Student/Teacher Ratio	11.2	Q1	9.77	0.129
		Q4	10.90	
Student/Special Education Teacher Ratio	0.7449	Q1	0.40	0.251
		Q4	0.25	
Student/Special Education Paraeducator Ratio	1.787	Q1	1.35	0.199
		Q4	0.68	
Education Spending Per Pupil	14892	Q1	14375.11	0.378
		Q4	14121.95	
Has PBIS (Yes=1)		Q1	0.67	0.404
		Q4	0.75	

Table 4.8 presents mean differences in community characteristics for Vermont

districts with the largest and smallest shares of students identified for special education

with ED. I find patterns like those illustrated by the correlations presented above – i.e., in

Vermont, districts with consistently high rates of identification for ED are in

communities where there are lower levels of reported physical ($p=0.001$) and mental

distress ($p=0.027$), food insecurity ($p=0.010$), uninsured households ($p=0.026$),

disconnected youth ($p=0.013$), and lower unemployment ($p=0.084$). Similarly, districts

with consistently higher rates of ED identification are in communities with higher

average median income (*p=0.015*).

Table 4.8

Comparison Between Districts with the Largest & Smallest Shares of Students with

ED, Community Factors (2014-2017)

Factor	Overall Mean - All Districts Statewide	Mean		One-Sided p
Percent experiencing physical distress	9.9560	Q1	11.3333	0.001
		Q4	9.5714	
Percent experiencing mental distress	11.7485	Q1	12.3333	0.027
		Q4	11.5040	
Percent food insecure	12.1324	Q1	13.3333	0.010
		Q4	11.9444	
Percent uninsured (health insurance)	5.8789	Q1	6.6667	0.026
		Q4	5.5357	
Percent disconnected youth	11.0114	Q1	16.0000	0.013
		Q4	9.2123	
Median income	55445.4184	Q1	46102.3333	0.015
		Q4	58796.2857	
Poverty rate	0.2100	Q1	0.2764	0.411
		Q4	0.2969	
SNAP receipt rate	0.12494	Q1	0.16109	0.481
		Q4	0.15839	
Single mother headed households	0.14563	Q1	0.14253	0.167
		Q4	0.18017	
Unemployment Rate	0.05383	Q1	0.08218	0.084
		Q4	0.06079	
SES composite	0.5200	Q1	0.0881	0.467
		Q4	0.1393	

CHAPTER 5: DISCUSSION

The primary purpose of this study was to explore the variability in the percentage of students identified as having an ED among Vermont supervisory unions and districts and examine the extent to which student, school, and community factors help explain that variability. The findings of this study contribute to the literature describing variability in ED identification rates. This study focused on one state, Vermont, and the variability among districts/supervisory unions. The results serve to support findings in the literature.

One challenge associated with identifying students as having ED , as described earlier, involves the definition of ED, the variety of tools used for assessment, and the level of professional discretion in eligibility determination. A 2018 study showed that out of 179 school psychologists given a mock special education report, only 56 found the student met eligibility criteria (Scardamalia, Bently-Edwards, & Grasty). The report was designed to represent a borderline case; however, the researchers found significant inconsistency both in the application of criteria and the qualitative descriptions among those who found the student eligible and between those who did and those who did not.

This is unsurprising given the volume of literature outlining the issues with the definition of ED. In fact, a 1978 article entitled "*Toward an Acceptable Definition of Emotional Disturbance*" (Alogozzine, Schmid, & Connors) that offered suggestions for ways to revamp the definition of ED was republished in 2017. Alogozzine wrote a "quiet rant" expressing distress at the lack of progress updating the definition, although there has been some movement toward providing better support to students. The findings of

variability in my study contribute to the literature illustrating concerns pertaining to the definition of ED.

This study's findings also suggest that systematic differences exist between Vermont districts that identify larger and smaller shares of students with ED. On the one hand, there seems to be a positive relationship between the percentage of economically-disadvantaged, ELL, and students receiving special education in a district and the percentage of students with ED in a district. At the same time, there appears to be an inverse relationship with many community-based measures of disadvantage and need, including physical and mental distress, and access to health insurance.

In fact, when comparing districts with the highest and lowest shares of students with ED, those with consistently higher rates of identification are in communities with, on average, higher median incomes. At the same time, I find that districts with higher percentages of students identified for ED have larger student teacher ratios and lower ratios of students to special education teachers and paraprofessionals.

Taken together, this descriptive profile suggests that while student, district, and community factors may be related to ED identification rates, how these factors work to mediate the relationship between the prevalence of disability in the population and identification rates may be somewhat more complicated than what is previously highlighted in the literature.

Student measures of disadvantage that may serve as proxies for ACES that trigger ED in children appear to be related to ED identification – that is, poor children who may also be non-native English speakers, may be more likely to be identified for both special

education and with ED. Hurless and Kong (2021) emphasize the importance of increased attention to the needs of culturally and linguistically diverse (CLD) students who may also have an ED. This is particularly applicable in Vermont where many of students who are CLD come from refugee families and have experienced trauma.

But the likelihood of identifying students as having an ED occurring increases in districts that are in wealthier communities, where, on average, there are lower levels of individual and family distress and where there are, on average, higher ratios of students to general education personnel and lower student to special education personnel ratios. These patterns raise questions about whether there are differences in identification norms and practices among districts based on resources used for students who have ACE/AFE or other emotional or behavioral needs.

Furthermore, this variation in identification may encompass another concern. Districts may overlook difficulties experienced by students who struggle with mental health concerns not adequately portrayed by the definition of ED – students with a trauma history. As indicated earlier in this paper, there is a large body of research showing the connection between trauma and negative physical and mental health outcomes. Winder (2015) explains that there are many students who have experienced trauma and could benefit from the additional special education supports yet do not receive them because they do not meet the eligibility criteria for ED.

As noted below, more research is needed, though, to disentangle these complex relationships.

Implications

There is substantial, persistent, and growing variability among Vermont school districts in the share of students identified for special education. The key question of interest to policymakers and practitioners, however, is to what extent is this variability systematic with respect to student, district, and community factors that may be malleable by education policies, practices, and resources?

While this study cannot answer this question definitively, the study's findings do point toward systematic patterns that need further investigation. Specifically, this study's findings suggest two potential paths for future research. First, additional statistical modeling is needed, particularly regression analyses where one can control for the independent relationships of multiple variables. Further analysis will help determine which of the factors have the most impact, particularly since many of these factors are correlated with each other.

Second, there is a need to better understand differences among districts in identification practices and norms. Case studies with selected school districts could provide a deeper understanding of factors influencing the share of students identified with ED in a supervisory union – especially factors not as easily assessed using quantitative data, as well as the interactions among factors. Case studies would involve visiting schools, interviewing stakeholders, and gathering documents and other artifacts that describe policies, practices, and resources a district or school uses to identify students with an ED. Documents could include family or staff handbooks; written procedures and forms such as those for educational support teams, IEP meetings, or office referrals; and

internal reports. In my experience, the process outlined in documents and the reality of the situation many times diverges, often because of time constraints and lack of personnel or other resources. Examining artifacts and conducting interviews could point to ways policies could be modified or improved.

Another implication involves the way outside resources may affect schools. In many cases districts are being tasked with responsibilities far beyond what has typically been expected. Some of those responsibilities were the purview of community resources, such as mental health support. One way to determine whether the process used by the school and related organizations is effective is by conducting an institutional ethnography. In that way, one looks closely at the experience from the student's perspective.

The data I collected seems to indicate an inverse relationship between families that expressed physical distress, mental distress, food insecurity, and lack of health insurance and the percentage of students identified as having an ED. Perhaps families who are experiencing physical or mental distress are receiving assistance and therefore students may not be identified as ED. Communities with higher food insecurity and lower insurance rates may use schools to help families, so there may be fewer students meeting the criteria for ED.

Finally, it may be beneficial to look more closely at the district situation with school psychologists, and if there is a relationship between the percentage of students identified for special education, and whether the school psychologists are employed by a district or contracted. There are many districts and SUs in Vermont that are not able to

hire school psychologists because of either cost or availability. Using U.S. DOE provisional data, the Vermont ratio of school psychologists in 2019-2020 was 1040 to 1, yet still far short of the 500 to 1 ratio recommended by NASP (National Association of School Psychologists, 2020). This lack of access may affect whether students are appropriately diagnosed and identified in a reasonable timeframe.

As communities and families face more challenges, schools must adapt. It is important to note that these challenges are being faced by families at all socio-economic levels. While the literature indicates there are some worries specifically related to financial distress, emotional disturbance or other mental health impairments can affect any family. Examining factors associated with identifying and classifying students for special education with an ED may help determine better ways to provide necessary support.

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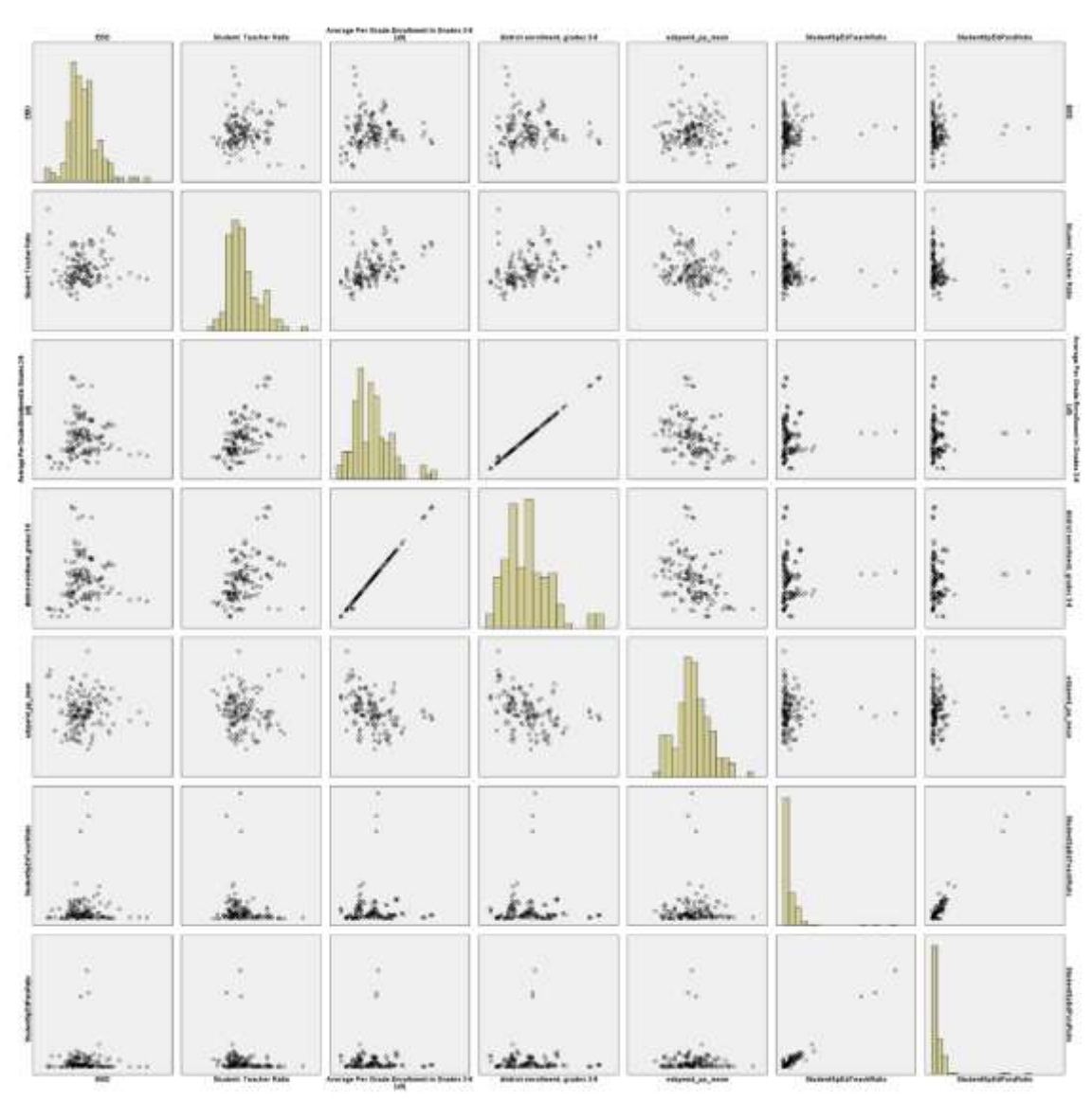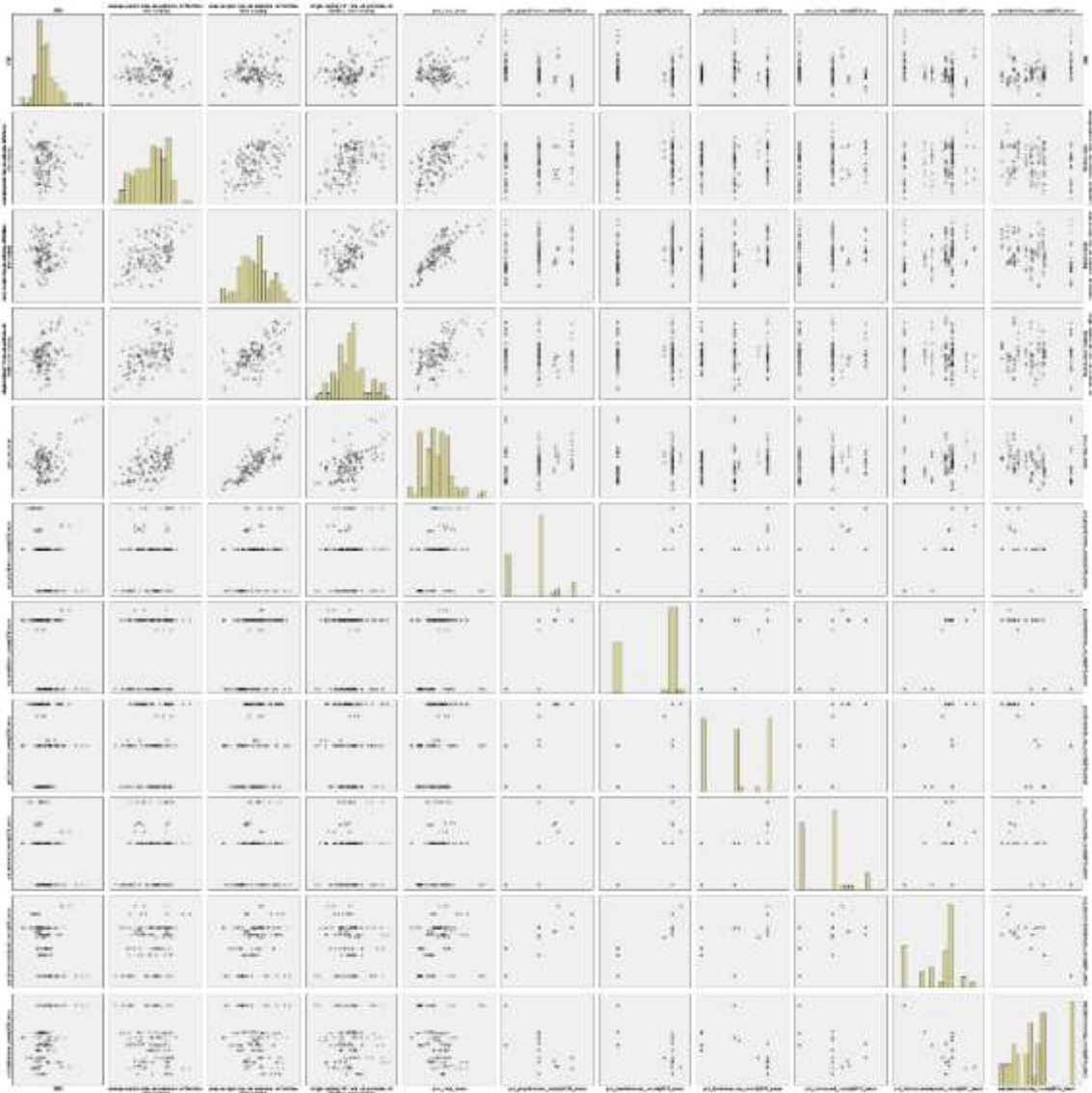
Additional Graphs

Scatterplot Matrix of ED and Student Characteristics
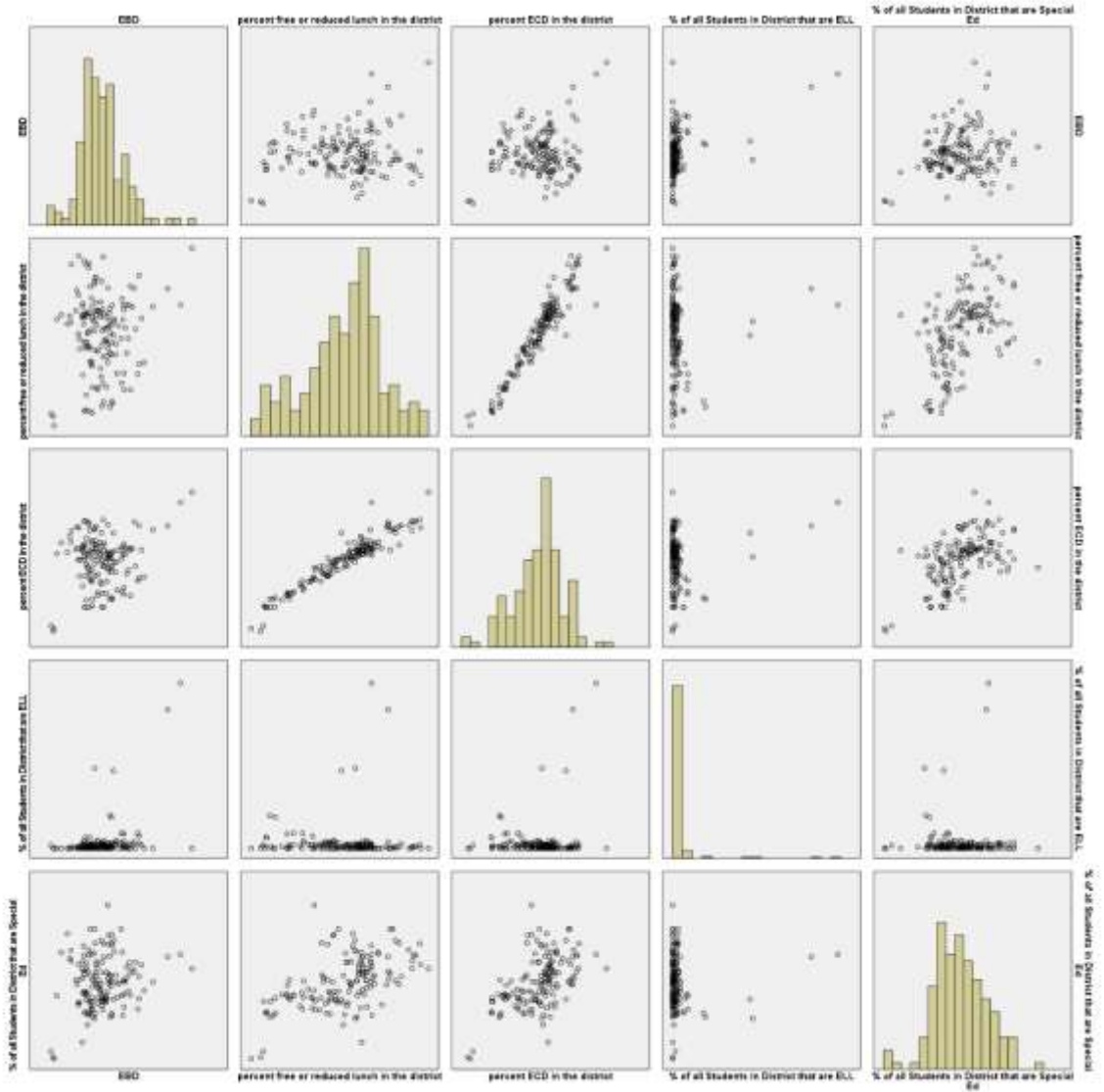
Scatterplot Matrix of School Based Characteristics

Scatterplot Matrix of Community Based Factors

Histogram of ED Across Districts/Supervisory Unions 2017

Simple Histogram of EBD17_mean