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Prevalence and Proportionality of English Language Learners in Minnesota Special Education

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Prevalence and Proportionality of English Language Learners in Minnesota Special Education

by

Hanna M. Zerfas

A Thesis

Submitted to the Graduate Faculty of

St. Cloud State University

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Thesis Committee:

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Abstract

Disproportionality of services to some groups of students in special education is a national problem in the United States due to the risk that students are missed for important intervention services, or students are being pulled from the general education curriculum when they are not in need of extra services. This study consisted of a statistical analysis of the Minnesota Automated Recording Student System data set to determine the extent of disproportionality amongst English-, Spanish-, Hmong-, Somali-, and “Other”- speaking students in each of the 14 special education categorical labels over the academic years 2006-07, 2009-10, and 2012-13. Prevalence rates, percentage change, risk ratios, analysis of variance, and Tukey’s Honest Significant Difference Test were used to determine if differences existed between home language groups in each special education category. Results indicate that, overall, English Language Learning (ELL) students in Minnesota were at risk for underrepresentation compared to English Primary Language students in special education, although there were also instances of overrepresentation in some special education categories for some language groups. There were significant differences in enrollment in 9 of the 14 special education categories (Specific Learning Disability (SLD), Speech-Language Impairment (SLI), Emotional Behavioral Disorder, Other Health Impairment, Developmental Delay, Autism Spectrum Disorder (ASD), Developmental Cognitive Delay Mild, Deaf/Hard of Hearing (D/HH), and Deaf-Blind), with over- and underrepresentation related to interactions between language groups and special education categories. Because SLD, SLI, ASD, and D/HH are special education categories in which students are frequently served by speech-language pathologists (SLPs), these categories were further examined to determine which home language groups in particular were significantly different. The results of this research has implications for special education professionals, education policy makers, and SLPs when serving students from culturally and linguistically diverse backgrounds. More research is needed to determine why disproportionality exists between language groups, if special education enrollment is beneficial for ELL students, and to determine prevalence rates of language groups in other states and within Minnesota school districts.

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Key Words: English Language Learners, Special Education, Prevalence and Proportionality

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Chapter I: Introduction

More than half the growth in the United States (U.S.) population between 2000 and 2010 was due to an increase in the Hispanic population (PEW Hispanic Center, from Sherill & Mayo, 2014). With this growing immigrant population comes diversity in the education system nationwide. Public schools are becoming increasingly multi-cultural and multi-lingual as demographic data indicate that White student enrollment is declining and enrollment for students of non-European origins is increasing (Center for Equity and Excellence in Education, 2009). Between 1968 and 2005, the number of White students in public education declined by 20% whereas the number of Latino(a) students increased by 380% (Orfield & Lee, 2007). This trend is further supported by the growth of the language minority population from 3.1 million in 1994-1995 to 5.1 million in 2004-2005 (Samson & Lesaux, 2009). Educators now face the challenge of meeting the needs of their changing student body, especially for children in need of special education services.

To optimize the growth and development of a child with a disability, early identification and intervention are important factors, as demonstrated in numerous research studies (Konstantin et al., 2014; Skiba et al., 2008; Ziviani, Darlington, Feeney, Rodger, & Watter, 2014). Bailey and Wolery (1992) indicate that intervention for developmental delays enhance the child's future capabilities and that, regardless of the severity of the disability, the child and family benefit from early identification and planning for intervention. Current research, however, indicates that students identified as culturally and linguistically diverse (CLD) are not receiving the supports and services they need to be successful in school (Sullivan, 2011). For example, a study done by Pérez and colleagues in 2008 indicated Latino(a) students were under-represented in special education at both the national level and in the state of Indiana. In addition, a nationwide study

involving 3,338 families (53% White, 21% Black, 16% Hispanic, 4% Asian/Pacific Islander, and 5% mixed race or “other”) with a child who has a disability, or has a child at risk for a disability, indicated minority families were more likely to report negative experiences with early intervention services compared to White families (Bailey, Hebbeler, Scarborough, Spiker, & Mallik, 2004). To examine why minority families report negative experiences, researchers have studied the role of the early child intervention professionals, including that of speech-language pathologists (SLPs).

Hammer, Detwiler, Detwiler, Blood, and Qualls (2004) recruited education-based SLPs from rural and urban, diverse and non-diverse communities through the American Speech-Language and Hearing Association’s (ASHA) membership list to participate in a survey regarding their training for working with CLD populations and their confidence in serving CLD clients. Two hundred and thirteen survey responses were returned and organized into three groups: (1) 59 responses from non-diverse rural areas, (2) 24 responses from non-diverse urban areas, and (3) 121 responses from diverse urban areas. Responses from SLPs in diverse-rural areas were omitted because only nine surveys were returned. Analysis of these surveys revealed, “approximately one third of participants in each of the three groups indicated they did not receive training on multicultural issues as a student” (Hammer, Detwiler, Detwiler, Blood, & Qualls, 2004, p. 97). Without this education, SLPs may classify English language learner (ELL) students who are typically developing bilinguals as having a speech-language impairment (SLI)¹ leading to overrepresentation of ELL students in this category. On the other hand, SLPs may opt to postpone assessment of a bilingual child for SLI because they do not understand the typical

¹ Special education categorical labels have changed over time. For example, the label *mental retardation* has been replaced with *developmental cognitive delay*. In this paper, the categorical labels identified by the MN Department of Education are used throughout for consistency, even if the authors of the texts cited used alternative labels for the disability category. See Appendix A for diagnostic criteria.

development patterns of a bilingual student leading to underrepresentation of ELL students in this special education category (Muñoz, White, & Horton-Ikard, 2014). Hammer and colleagues concluded that SLPs, especially those in the education setting, are in need of education and training for working with CLD populations.

The present study will examine the disproportionality of ELL students who are receiving special education services under each of the 14 categorical labels in Minnesota public schools. Disproportionality has been defined as “the extent to which membership in a given (ethnic, socioeconomic, linguistic, or gender) group affects the probability of being placed in a specific disability category” (Oswald, Coutinho, Best, & Singh, 1999, p. 198). Examination of disproportionality is valuable to researchers, education professionals, and policy makers because it provides baseline data and methods for monitoring progress in reducing disparity, as well as supporting efforts for change (Skiba et al., 2008; Sullivan, 2011).

Disproportionality in Special Education

Disproportionality of minority students within the special education system is among the most critical and enduring problems in special education because it presents the possibility that students are receiving inappropriate labels and services (Skiba et al., 2008; Sullivan, 2011). The problem of disproportionality stems from the oppression and discrimination patterns that have characterized racial relationships throughout America’s history (Skiba et al., 2008). There has been consensus on factors hypothesized to lead to disproportionality. These include: a) demographic factors (e.g., minority enrollment, proportion of teachers from minority backgrounds), b) poverty, c) difficulty meeting requirements for special education due to the limited availability of evaluation tools in ELL native languages, d) the size of the district, e) test bias, and f) the availability of alternative programs such as bilingual education (Artiles, Rueda,

Salazar, & Higareda, 2005; Shifrer, Muller, & Callahan, 2011; Skiba et al., 2008; Sullivan, 2011). However, research is limited regarding the extent each of these factors plays in disproportionality.

Studies conducted on special education populations have primarily focused on the race of the child receiving services, and there is limited research available regarding the potential impact of language proficiency (Artiles et al., 2005). Researchers have consistently reported African American and Native American students are overrepresented in “high-incidence” disability categories based on national data analysis (Artiles et al., 2010). High incidence categories, including Specific Learning Disability (SLD), Developmental Cognitive Disability (DCD), Emotional/Behavioral Disorders (EBD), and SLI, have been the main focus of studies because they constitute a large percentage of students receiving services (DeMatthews, Edwards, & Nelson, 2014; Sullivan, 2011). It has been further noted that these special education categories have vague and inconsistent definitions across contexts, and the diagnostic practices differ considerably among states, school systems, and individual practitioners (Artiles, Kozleski, Trent, Osher, & Ortiz 2010; Sullivan, 2011). Skiba and colleagues (2008) reported that disproportionate representation was greater in the “judgmental” disability categories of DCD, EBD or SLD compared to the “nonjudgmental” disability categories, such as Deaf/Hard of Hearing (D/HH) or Blind-Visually Impaired (Blind-VI; Skiba et al., 2008, p. 269).

In addition to race, the role of poverty in disproportionality has been evaluated. The argument has been made that poverty justifies disproportionality because children growing up in low-income households are more likely to experience stressors and developmental threats due to their environment. In addition, low-income students are more likely to have limited English proficiency, have immigrant parents, and be retained in school (Komenski, Jamieson, &

Martinez, 2001). However, recent research indicates that poverty alone makes a “weak and inconsistent contribution to the prediction of disproportionality across a number of disability categories” (Artiles et al., 2010, p. 282). Skiba and colleagues (2008) also concluded “...research to this point has not supported the hypothesis that poverty is the sole or even primary cause of racial and ethnic disparities in special education” (p. 273-4). Therefore, research needs to shift to other factors that influence the likelihood of special education enrollment, such as a child’s English proficiency level.

Disproportionality and English Language Learning Students

According to the U.S. Department of Education Office of Special Education Programs (2002), the number of ELL students enrolled in special education programs has increased by 14.2% from 1987 to 2001. In addition, recent literature suggests that ELL students begin receiving special education services two to three years later than the average student whose primary language is English (EPL; Artiles et al., 2005; Samson & Lesaux, 2009; Sullivan, 2011). It is common for a student’s bilingual language acquisition to be confused with learning problems, leading to an ELL student’s increased chance of misclassification with a disability (DeMatthews et al., 2014; Shifrer et al., 2011; Pérez, et al., 2008; Sullivan, 2011). In terms of language impairment, this may present as a challenge in distinguishing between a language *difference* and a language *disorder*. A language difference describes an individual who speaks a language or dialect other than Standard American English (SAE) and has no language disorder or delay present. An individual with a language difference may have errors when they speak SAE, though the errors arise from the nature of their native language rather than a disorder. A language disorder is an impairment in the morphology, phonology, syntax, semantic, or pragmatic areas of language in any combination not related to cultural or linguistic factors (Paul & Norbury, 2012).

Overrepresentation in special education is problematic for students because the trajectories of students in special education are often marked by school failure and low academic attainment (Pérez et al., 2008). However, there are also ELL students who are underrepresented in special education due to educators assuming their academic struggles are attributed to their emerging English language proficiency, and thus do not consider the option the student has a disability (Muñoz et al., 2014; Pérez et al., 2008; Sullivan, 2011).

Researchers have examined disproportionality for ELL students at the local and national levels, and have used a variety of research designs. Samson and Lesaux (2009) performed a cross sectional study to determine if ELL students were represented in special education to the same degree as their EPL peers. The authors used public data from the Early Childhood Longitudinal Study – Kindergarten Cohort, a nationally representative sample of 22,782 children enrolled in kindergarten during the 1998-1999 academic year. From these data, Samson and Lesaux included 2,470 ELL students and 8,517 EPL students from across the nation. Results indicated a lower initial rate of identification for ELL students in comparison to EPL students, followed by overrepresentation beginning in third grade. Table 1.1 shows the percentages of ELL and EPL students being identified for special education services.

Table 1.1. Summary of results presented in Samson and Lesaux (2009)

Grade Level	Percentage of ELL Students Identified for Special Education Services	Percentage of EPL Students Identified for Special Education Services
Kindergarten	4.03%	5.50%
1 st Grade	8.48%	8.99%
3 rd Grade	16.31%	12.76%

In addition, the representation of EPL learners in special education increased by 132% from kindergarten to third grade, while ELL students increased by 305% in the same time frame. The authors posited the differences of identification in the data signify ELL students were missed for

special education services during the important early intervention years, birth to six years of age (Samson & Lesaux, 2009). Delayed delivery of services is detrimental to children because they are not provided the means to adapt and accommodate to their disability. Later identification also influences their later development and response to intervention as established maladaptive habits must be overcome before new, healthy, habits can be developed (Riffel, 2011).

A study conducted by Artiles, Rueda, Salazar, and Higuera (2005) found results similar to Samson and Lesaux (2009). In this study, the authors used the databases of 11 urban school districts located in southern California for the 1998-1999 academic year. These school districts serve one of the most diverse student populations in the country with enrollment data indicating the population was 69% Latino(a)/Chicano(a), 10.5% White, 13.6% African American, 4.3% Asian, 1.9% Filipino, 0.4% Pacific Islander, and 0.3% American Indian/Alaska Native. Latino(a) students represented 94% of the ELL elementary education population, and 91% of the ELL secondary education population. For this study, four subgroups were examined, ELLs with limited home/primary language (L1) proficiency, ELLs with limited L1 and limited secondary language (L2) proficiency, EPL students, and White students. The authors focused on the special education categories typically affected by overrepresentation – that is, DCD, SLI, and SLD (Artiles et al., 2005, p. 288). Statistical analysis included the calculation of a composition index, a risk index, and an odds ratio to determine if ELL students were over- or underrepresented in the specified special education categories. Results indicate that compared to White learners, ELL students were underrepresented in the special education categories in grades K-5. However, in grade 6 they became overrepresented. When compared to EPL students, ELLs became overrepresented in special education in fourth grade. The authors noted that ELL students were more likely to be placed in special education under the categorical label of SLD or SLI than the

categorical label of DCD. In addition, ELL students in English immersion programs were more likely to be placed in special education programs than ELL students placed in other language support programs (Artiles et al., 2005).

DeMatthews, Edwards, and Nelson (2014) completed a study on U.S. – Mexico border states including Texas, Arizona, New Mexico, and California. To determine if districts and individual schools had implemented policies to identify ELL students for special education, a qualitative study was designed that included observations in the schools, review of documents, and interviews with teachers, principals, school district administrators, and state education agency administrators. Results of the study indicate a severe shortage of information regarding how states are to provide guidance to districts or schools regarding ELL student placement in special education. In addition, the authors noted that teachers were often confused about when an ELL student may be evaluated for services, as many teachers stated they must wait one to two years until after the child enters the school before they may qualify for services. This is incorrect and in direct violation of the Individuals with Disabilities Act (IDEA), which mandates all students be evaluated for special education services as soon as it is suspected the student has a disability (DeMatthews et al., 2014). Therefore, due to the lack of information or misinformation passed down from the state to the local school districts, teachers did not have the appropriate knowledge needed to identify an ELL student with a disability (DeMatthews et al., 2014).

A longitudinal study by Estrem and Zhang (2010) further supports disproportionate identification of ELL children with disabilities. The purpose of their study was to quantify and characterize the trends in prevalence rates of children who received special education services for autism spectrum disorders (ASD) in Minnesota, with a focus on children of immigrants (Estrem & Zhang, 2010, p. 7). The authors examined the four most common languages spoken in

Minnesota (i.e., Spanish, Somali, Hmong, and English). Data from the Minnesota Department of Education (MDE) across six years were analyzed for prevalence rates, proportionality, and age of classification under the special education categorical label of ASD. Across the six years, results indicate disproportionality of children served under the categorical label of ASD amongst ELLs, compared to EPL students. Specifically, there was a greater increase over time in English and Somali children being served under the categorical label of ASD when compared to Spanish or Hmong. In addition, the age of entry into special education services varied among language groups, with Spanish- and Somali-speaking students identified at a younger age than Hmong- and English-speaking students. Their findings support results of other studies on disproportionality of ELL students, and extends previous research with inclusion of specific languages.

Sullivan (2011) examined disproportionality at the statewide and district level for ELL students in general (i.e., no home language was specified) over a span of eight years (1999 – 2006). A southwestern state constituting 1.1 million students, 16% of whom were ELL, was selected for the analysis. General special education enrollment and enrollment in the high-incidence categories of DCD, EBD, SLD, and SLI was examined. Relative risk ratios were used to calculate the likelihood of identification of ELL students compared to White (not necessarily EPL) students; a range of 0.80 to 1.20 was deemed acceptable. Results indicate that at the state and district levels, ELL students were increasingly overrepresented over time in the special education categories of DCD, SLI, and SLD. Analysis of the data indicate that within the eight-year period, ELL students went from 30% *less* likely to be identified to being 30% *more* likely to be identified. Finally, districts with higher proportions of ELL students were less likely to have disproportionality in special education generally, and in the categories of SLD or SLI

specifically. To better understand disproportionality of ELL students in special education, the author concluded more research is needed to examine the effects of language support, preservice training, and professional development on ELL's academic performance.

Other researchers have focused on the Hispanic population specifically. In a meta-analysis, Guiberson (2009) examined patterns of Hispanic representation in special education. Using a seven-step process that involved identifying relevant articles in computerized databases, organizing and summarizing the articles into broad categories, and assembling the literature review based on themes, important concepts, and future research. Results indicate that the pattern of Hispanic representation in special education varied with state, school district, and disability. More Hispanic students were identified as having SLD or SLI compared to their non-Hispanic peers, but fewer Hispanic students were receiving services for DCD compared to their non-Hispanic peers (Guiberson, 2009). Guiberson posited this might be due to cultural incompetence on the part of the education specialist, or the school officials' use of a "default" system to identify students (i.e., if a student, regardless of language and culture background, is struggling academically he/she is automatically referred, and likely enrolled, in special education). In particular, results of this study may be an indicator of the challenge of determining a language difference from a language disorder.

The present study will contribute to the research base of the disproportionate representation of ELL students with specific home languages specified for each of the 14 special education categories identified by MDE. To date, no study has included a cross-sectional approach across seven years that examined all 14 special education categories across multiple language groups. With this information, policy makers, education professionals, and health care professionals will gain a better understanding of the distribution of ELL students in special

education, and thus be able to make improved educated decisions regarding intervention procedures for ELL students.

Purpose of the Study:

This study examines the prevalence and proportionality of students whose home language was English, Spanish, Hmong, Somali and “Other”², and who were receiving services for special education in Minnesota public schools during the academic years 2006-07, 2009-10, and 2012-

13. Specific research questions included:

1. What are the prevalence rates of 5 to 18-year-olds who speak English, Spanish, Hmong, Somali, and “Other” languages in the 14 special education categories in Minnesota public schools during the 2006-07, 2009-10, and 2012-13 academic years?
2. How has the population and prevalence rates of English-, Spanish-, Hmong-, Somali-, and “Other”- speaking 5 to 18-year-olds changed between the academic years 2006-07 and 2012-13?
3. When compared to English-speaking students, is there a risk of disproportionality for Spanish-, Hmong-, Somali-, and “Other”- speaking 5 to 18-years-old in the 14 special education categories in 2006-07, 2009-10, and 2012-13?
4. Is there a statistically significant difference between the language groups in the 14 special education categories in 2006-07, 2009-10, and 2012-13?
5. For the special education categories of SLD, SLI, ASD, and D/HH, which language groups (English, Spanish, Hmong, Somali, “Other”) were significantly different from each other?

² In this data set, 153 languages were included in the “Other” category. These languages included those documented as being spoken in MN public schools, but were not the most prevalent and thus not examined individually.

Chapter II: Methods

Evaluation of the MARSS data

In accordance with IDEA, MDE has 14 categorical disability areas under which students may qualify to receive special education services (see Appendix A for qualification information). IDEA mandates all states collect annual data on the number of individuals receiving services that are provided, or paid for, by the state under each categorical label. In Minnesota, these data are collected and stored in a system known as the Minnesota Automated Reporting Student System (MARSS).

MARSS data were received for the academic years 2000-2001 through 2012-2013 for individual students who received special education services under each of the 14 primary categorical labels. The data set included demographic information of each student including age as of December 1, gender, ethnicity, home language/ELL (identified with home language survey; Appendix B), limited English proficiency, and free or reduced price lunch eligibility. Within the data set, disability codes for 3,165 out of 439,473 (0.72%) students across the seven years were not available and thus these data points were not included in the study. Enrollment data included region, school district, number of attendance hours, total membership hours (direct and indirect services), and district special education enrollment totals. Before releasing the data set, the MDE encrypted student identification numbers to preserve anonymity and confidentiality. General population data for proportionality calculations was retrieved through the MDE data and analytics webpage (<http://w20.education.state.Minnesota.us/MDEAnalytics/Data.jsp>).

This study focused on the prevalence of children whose home language was English (EPL³) or English language learners (ELL⁴) who speak Spanish, Somali, Hmong, or “Other” languages. These languages were selected because they are the most predominate in Minnesota. In addition, the largest Somali community and second largest Hmong community residing in the U.S. are in Minnesota (Dimayuga-Bruggeman & Schleicher, 2014). To make this large data set more manageable for analysis, data from the academic years 2006-07, 2009-10, and 2012-13 including students 5 to 18-years-old were examined to determine how the prevalence rate of each language group receiving special education services in each of the 14 categorical labels changed over time.

Prevalence Rates (Question 1) and Change Over Time (Question 2)

To determine a language population’s prevalence rate, the total number of students who were enrolled in a special education category who spoke a specific language was divided by the total number of students who spoke that language in Minnesota public schools. The value given was then multiplied by 1000 to provide prevalence rates per 1000 students in each special education category. To determine how language populations changed over time in the special education categories, percentage change was calculated for each language group in each of the 14 special education categories. To determine the percentage change, the language group’s prevalence rate in 2006-07 was subtracted from the prevalence rate in 2012-13, then divided by

³ The term “English as a primary language (EPL)” is used in this report to describe students whose home language is English, distinct from students who speak English though have parents who speak another language in the home.

⁴ The term “English language learner (ELL)” is used in this report to describe a student whose home language is not English, but who may speak English in addition to other languages. This is the same definition used by the MDE who uses the Home Language Survey (Appendix B) to identify a home language other than English.

the prevalence rate in 2006-07 and multiplied by 100. A negative value signified a decrease in enrollment from 2006-07 to 2012-13.

Calculation of Risk Ratios (Question 3)

To determine the specific risk ELL students had of receiving special education services under each of the categorical labels in Minnesota public schools compared to EPL students, risk ratios (RR) were calculated. The MDE (2008) has used RR calculations, and the statistic is recommended for calculating disproportionality because it is easy to interpret and does not require reference to other data (Bollmer, Bethel, Garrison-Mogren, & Brauen, 2007). In this study, the comparison group was EPL students because the majority of students enrolled in Minnesota public schools have a home language of English, and public perception of discrimination is based on a comparison to the majority group (Coutinho & Oswald, 2000). The equation for RR is modeled below:

$$\text{Risk ratio} = \frac{\text{Risk for language group}}{\text{Risk for comparison group}}$$

For this study, the student's home language spoken was considered the risk factor for over- or underrepresentation of special education services. Therefore, the equation for Spanish-speaking students, for example, may be written as follows:

$$\text{RR} = \frac{\text{Spanish-speaking students in special education category} \div \text{All Spanish-speaking students}}{\text{EPL students in special education category} \div \text{All EPL students}}$$

A RR of 1.00 indicates no difference between the ELL group and the EPL group in receiving services for that category of special education. A RR less than 1.00 indicates the language group is at a lesser risk of receiving services (i.e., they are underrepresented for that categorical group), and a RR greater than 1.00 indicates the language group is at a greater risk for receiving special education services (i.e., they are overrepresented for that categorical group) when compared to EPL students (Bollmer, et al., 2007).

Prevalence Rates between Language Groups (Questions 4 and 5)

To determine if the prevalence rates of children receiving services under each of the 14 categorical labels in Minnesota public schools were significantly different between language groups and years, an analysis of variance (ANOVA) was conducted in conjunction with a post hoc Tukey Honest Significance Difference test (Tukey's HSD). ANOVA is a particular form of statistical hypothesis testing that compares the means of two or more groups to determine if there is statistical significance across the groups. In this study, the prevalence rates of each language group were compared to one another to determine if prevalence rates in each special education category were statistically significant at $p < 0.01$. Tukey's HSD was then calculated to provide specific information about the significant differences ($p < 0.01$) in prevalence rates between language groups in SLD, SLI, ASD, and D/HH.

The St. Cloud State University International Review Board approved this methodology (Appendix C).

Chapter III: Results

Description of Populations:

In order to answer the first question about the prevalence rates of 5 to 18-year-olds who speak English, Spanish, Hmong, Somali, and “Other” in the 14 special education categories within Minnesota public schools in the 2006-07, 2009-10, and 2012-13 academic years, I first examined the Minnesota student population, then compared it to the Minnesota special education population. Overall, the total Minnesota student population experienced a slight increase (0.28%) from 2006-07 to 2012-13, though there were fewer students enrolled in 2009-10 compared to the other years (Table 3.1). The English- and Hmong-speaking student populations decreased over the three years, whereas the Spanish-, Somali-, and “Other”-speaking populations increased during the same period. These changes in enrollment in Minnesota public schools reflect the increasing diversity of the student body.

In the total special education population, all language groups experienced an increase in special education enrollment from 2006-07 to 2012-13, with the exception of the Hmong-speaking groups, which had a consistent enrollment of 2,506 students in special education in both 2009-10, and 2012-13 (Table 3.1). The English-speaking group had the highest overall prevalence rate of students enrolled in special education in 2006-07, and the second highest prevalence rates in 2009-10 and 2012-13, after Spanish-speaking students. The “Other”-speaking population had the third highest prevalence rates across the three years, followed by Hmong- and Somali-speaking populations.

Table 3.1 Total Population Data of Language Groups across the Academic Years 2006-07, 2009-10, and 2012-13

Total population of each language group				
	2006-07	2009-10	2012-13	Percent Change
English	1,477,128 (89.2%)	1,449,962 (88.1%)	1,443,854 (86.9%)	-2.25%
Spanish	64,478 (3.9%)	73,900 (4.5%)	81,346 (4.9%)	20.74%
Hmong	45,248 (2.7%)	42,940 (2.6%)	40,310 (2.4%)	-10.91%
Somali	19,166 (1.2%)	22,342 (1.4%)	29,752 (1.8%)	55.23%
Other	50,462 (3.0%)	56,862 (3.5%)	65,930 (4.0%)	30.65%
Total Population	1,656,482 (100%)	1,646,006 (100%)	1,661,192 (100%)	0.28%
Total number of students enrolled in special education				
English	129,988 (91.8%)	133,091 (90.3%)	134,294 (89.2%)	3.31%
Spanish	5,393 (3.8%)	6,941 (4.7%)	7,953 (5.3%)	47.47%
Hmong	2,300 (1.6%)	2,506 (1.7%)	2,506 (1.7%)	8.96%
Somali	866 (0.6%)	1,191 (0.8%)	1,599 (1.1%)	84.64%
Other	2,994 (2.1%)	3,641 (2.5%)	4,210 (2.8%)	40.61%
Total Population	141,541 (100%)	147,370 (100%)	150,562 (100%)	6.37%
Overall prevalence rate of language group in special education per 1000 students				
English	87.98	91.79	93.00	5.71%
Spanish	81.65	93.93	97.77	19.74%
Hmong	50.82	58.35	62.18	22.35%
Somali	45.29	53.31	53.73	18.64%
Other	59.24	64.02	63.86	7.80%

Prevalence Rates of Disability Categories across Language Groups

Prevalence rates for the five language populations in each of the 14 special education categorical labels were then examined for the academic years 2006-07, 2009-10, and 2012-13. To calculate a language populations' prevalence rate, the total number of students who spoke a specific language enrolled in a special education category was divided by the total number of students who spoke that language in Minnesota public schools. Results were reported per 1,000 students (Table 3.2) and indicate that each language group experienced an increase in special education enrollment between 2006-07 and 2012-13. This is further illustrated in Figure 3.2. Rankings of special education categories were then examined. A ranking of 1 indicated the

category had the highest prevalence rate for the specific language group, and a ranking of 14 indicated the category had the lowest prevalence rate for the specific language group. Table 3.3 illustrates the relative rankings of the 14 special education categories for each language group. As the table shows, rankings for most disability categories are similar across most languages.

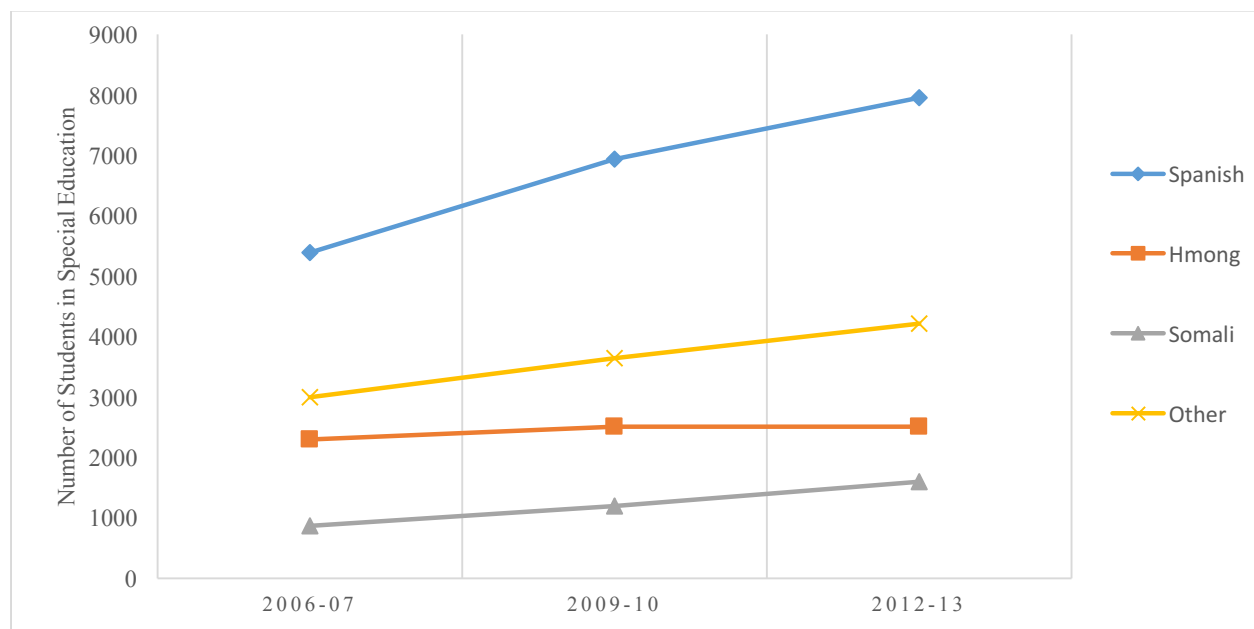


Figure 3.1 ELL Student Enrollment in Special Education from 2006-07 to 2012-13.

Table 3.2. Prevalence Rates per 1000 of English-, Spanish-, Hmong-, Somali-, and “Other”- Speaking Students in the 14 Special Education Categorical Labels across the Academic Years 2006-07, 2009-10, 2012-13.

	2006-07				
	English	Spanish	Hmong	Somali	Other
SLD	21.95	35.05	24.82	11.79	14.15
SLI	17.61	16.56	11.12	7.04	12.58
EBD	13.19	4.84	1.28	3.23	3.79
OHI	9.98	3.91	1.15	1.15	3.03
DD	8.41	11.99	1.90	8.09	6.87
ASD	7.07	2.19	1.28	4.59	5.11
DCD Mild	4.87	3.88	2.45	3.03	3.57
DCD Severe	1.43	1.30	1.35	1.46	1.41
D/HH	1.31	1.83	3.82	2.30	6.60
Physical Impairment	1.13	0.98	0.62	1.20	0.91
SMI	0.41	0.47	0.33	0.63	0.40
TBI	0.32	0.33	0.35	0.21	0.22
Blind-Visually Impaired (VI)	0.27	0.29	0.33	0.57	0.44
Deaf-Blind	0.03	0.03	0.02	0	0.16
TOTAL	87.98	81.65	50.82	45.29	59.24
	2009-10				
SLD	20.66	39.03	26.06	12.80	14.12
SLI	17.03	18.47	14.28	8.24	13.23
EBD	12.79	4.70	0.98	2.86	3.55
OHI	11.63	4.14	1.51	2.24	3.85
DD	10.14	14.25	3.63	8.91	7.97
ASD	9.75	3.86	1.98	6.80	7.69
DCD Mild	4.63	3.87	2.77	3.45	3.64
DCD Severe	1.35	1.19	1.30	2.42	1.42
D/HH	1.34	2.17	3.96	2.15	6.40
Physical Impairment	1.14	0.88	0.84	1.39	0.84
SMI	0.67	0.76	0.58	1.48	0.42
TBI	0.32	0.22	0.23	0.31	0.14
Blind-Visually Impaired (VI)	0.30	0.31	0.21	0.22	0.42
Deaf-Blind	0.04	0.08	0.02	0.04	0.33
TOTAL	91.79	93.93	58.35	53.31	64.02
	2012-13				
SLD	19.56	40.52	26.87	11.60	12.56
SLI	17.05	18.61	14.17	7.60	12.89
OHI	12.81	5.72	1.56	3.15	3.73
EBD	11.91	4.67	1.12	2.62	2.93
DD	11.14	13.94	5.31	9.44	9.84
ASD	11.11	5.05	3.25	7.73	9.04
DCD Mild	4.16	3.60	2.36	4.03	3.31
D/HH	1.40	1.94	4.24	1.65	5.70
DCD Severe	1.26	1.34	1.39	2.45	1.43
Physical Impairment	1.13	0.92	0.87	1.34	1.18
SMI	0.82	0.84	0.62	1.41	0.62
TBI	0.32	0.21	0.17	0.34	0.11
Blind-Visually Impaired (VI)	0.30	0.37	0.20	0.30	0.32
Deaf-Blind	0.03	0.04	0.05	0.07	0.20
TOTAL	93.00	97.77	62.18	53.73	63.86

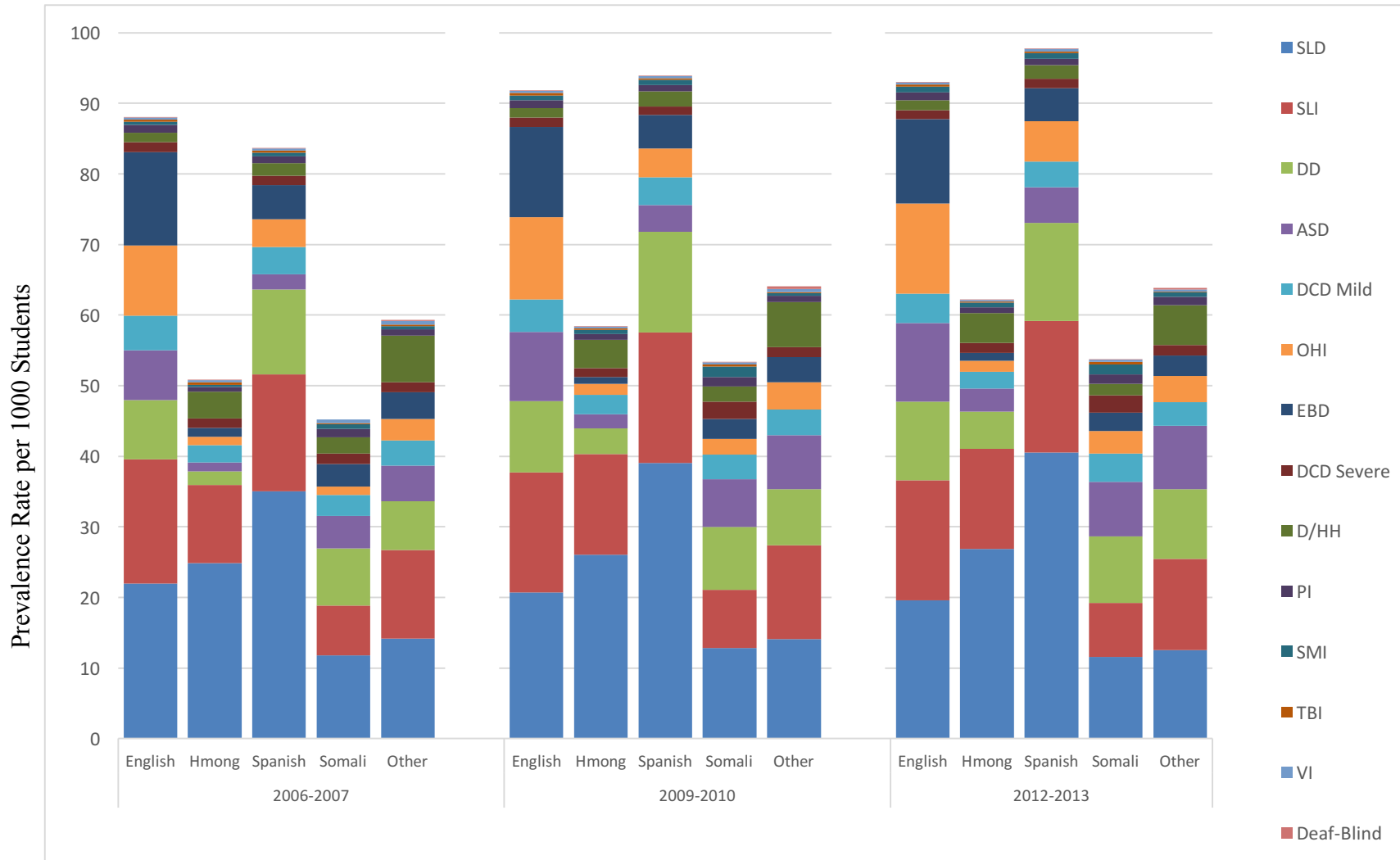


Figure 3.2. Prevalence Rates by Language Groups for Students Enrolled in Special Education across Disability Categories and the Academic Years 2006-07, 2009-10, and 2012-13.

Table 3.3. Rankings of Disability Categories Based on Primary Language across the Academic Years 2006-07, 2009-10, and 2012-13

2006-2007						2009-2010					2012-2013					
Rank	Eng.	Hmo.	Spa.	Som.	Oth.	Eng.	Hmo.	Spa.	Som.	Oth.	Eng.	Hmo.	Spa.	Som.	Oth.	
1	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLI	
2	SLI	SLI	SLI	DD	SLI	SLI	SLI	SLI	DD	SLI	SLI	SLI	SLI	DD	SLD	
3	EBD	D/HH	DD	SLI	DD	EBD	D/HH	DD	SLI	DD	OHI	DD	DD	ASD	DD	
4	OHI	DCD Mild	EBD	ASD	D/HH	OHI	DD	EBD	ASD	ASD	EBD	D/HH	OHI	SLI	ASD	
5	DD	DD	OHI	EBD	ASD	DD	DCD Mild	OHI	DCD Mild	D/HH	DD	ASD	ASD	DCD Mild	D/HH	
6	ASD	DCD Sev.	DCD Mild	DCD Mild	EBD	ASD	ASD	DCD Mild	EBD	OHI	ASD	DCD Mild	EBD	OHI	OHI	
7	DCD Mild	ASD	EBD	ASD	D/HH	DCD Mild	DCD Mild	OHI	ASD	DCD Sev.	DCD Mild	DCD Mild	OHI	DCD Mild	EBD	DCD Mild
8	DCD Sev.			D/H H	DCD Sev.	OHI	DCD Sev.	DCD Sev.	D/HH	OHI	EBD	D/HH	DCD Sev.	D/HH	DCD Sev.	EBD
9	D/HH	OHI	DCD Sev.	PI	DCD Sev.	D/HH	EBD	DCD Sev.	D/HH	DCD Sev.	DCD Sev.	EBD	DCD Sev.	D/HH	DCD Sev.	
10	PI	PI	PI	OHI	PI	PI	PI	PI	SMI	PI	PI	PI	PI	SMI	PI	
11	SMI	TBI	SMI	SMI	VI	SMI	SMI	SMI	PI	SMI	VI	SMI	SMI	SMI	PI	SMI
12	TBI	SMI	VI	TBI	VI	TBI	VI	TBI	TBI			TBI	VI	VI	VI	TBI
13	VI			VI	TBI	TBI	Deaf-Blind	VI	VI	TBI	VI	Deaf-Blind	VI	TBI	TBI	VI
14	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	TBI	Deaf-Blind	Deaf-Blind	Deaf-Blind	Deaf-Blind	TBI	

Specific Learning Disability

SLD was the special education category with the greatest number of students enrolled across all three years (Figure 3.2). Across the three academic years (2006-07, 2009-10, 2012-13), Spanish-speaking students had the highest prevalence rates (35.05, 39.03, 40.52, respectively), followed by Hmong- (24.82, 26.06, 26.87), English- (21.95, 20.66, 19.56), “Other”- (14.15, 14.12, 12.56) and Somali- (11.79, 12.80, 11.60) speaking students (Table 3.2). SLD was ranked first for all language groups across the three academic years, with the exception of “Other”-speaking students, which had SLD ranked second behind SLI in 2012-13 (Table 3.3).

Speech Language Impairment

As shown in Table 3.2, SLI was another special education category that contained high prevalence rates across the three academic years and across all language groups. English-speaking students had the highest prevalence rate in 2006-07 (17.61), and Spanish-speaking students had the highest prevalence rates in 2009-10 and 2012-13 (18.47, 18.61, respectively). Somali-speaking students had the lowest prevalence rates in SLI across the three academic years (7.04, 8.24, 7.60, respectively). Figure 3.3b shows the distribution of the language groups in SLI across the three academic years. SLI was consistently ranked second for English-, Spanish-, and Hmong-speaking students. For Somali-speaking students, SLI ranked third in 2006-07 and 2009-10, and fourth in 2012-13. For “Other”-speaking students, SLI ranked second in 2006-07 and 2009-10, and first in 2012-13.

Emotional/Behavioral Disorder

Examination of the special education category EBD revealed English-speaking students had much higher prevalence rates compared to the other language groups at rates of 13.19, 12.79, and 11.91 across the three academic years (Table 3.2). Spanish-speaking students had the next highest prevalence rates (4.84, 4.70, 4.67) followed by “Other”- (3.79, 3.55, 2.93), Somali- (3.23,

2.86, 2.62) and Hmong- (1.28, 0.98, 1.12) speaking students across the three academic years. EBD decreased in ranking for all language groups across the three academic years (Table 3.3). English-speaking students had EBD ranked third (the highest among all language groups) in 2006-07 and 2009-10, and fourth in 2012-13. Hmong-speaking students with EBD ranked the lowest, at seventh in 2006-07, and ninth in 2009-10 and 2012-13. The Spanish, Somali, and “Other” language groups had EBD ranked from fourth to eighth within the three academic years.

Other Health Impairment

English-speaking students had much greater prevalence rates than the other language groups in the category of Other Health Impairment (OHI) across the three academic years (9.98, 11.63, 12.81, respectively; Table 3.2). In fact, English-speaking students’ prevalence rates were over twice as high as those for Spanish-speaking students who had the next highest prevalence rates at 3.91, 4.14, and 5.72 across the three academic years. “Other”-speaking students had the third highest prevalence rates (3.03, 3.85, 3.73) followed by Somali- (1.15, 2.24, 3.15) and Hmong- (1.15, 1.51, 1.56) speaking students. OHI increased in ranking across the three academic years for each of the five language groups (Table 3.3). When all language groups were compared to each other, OHI was ranked highest for English-speaking students (fourth in 2006-07 and 2009-10, and third in 2012-13), followed by Spanish-speaking students (fifth in 2006-07 and 2009-10, and fourth in 2012-13). OHI increased in ranking from ninth to seventh for Hmong-speaking students across the three academic years. Somali-speaking students had OHI ranked lowest at tenth in 2006-07, though this increased to eighth in 2009-10, and to sixth in 2012-13.

Developmental Delay

Examination of the Developmental Delay (DD) category revealed Hmong-speaking students had much lower prevalence rates (1.90, 3.63, 5.31) compared to the other language

groups (Spanish = 11.99, 14.25, 13.94; English = 8.41, 10.14, 11.14; Somali = 8.09, 8.91, 9.44; Other = 6.87, 7.97, 9.84; Table 3.2). DD was ranked fifth for English-speaking students, third for Spanish- and “Other”- speaking students, and second for Somali-speaking students across the three academic years (Table 3.3). DD increased in ranking for Hmong-speaking students from fifth in 2006-07, to third in 2012-13.

Autism Spectrum Disorder

Similar to DD, Hmong-speaking students had the lowest prevalence rates in the category of ASD across the three academic years with prevalence rates of 1.28, 1.98, and 3.25, respectively (Table 3.2). English-speaking students had the highest prevalence rates (7.07, 9.75, 11.11) across the three academic years, followed by “Other”- (5.11, 7.69, 9.04), Somali- (4.59, 6.80, 7.73) and Spanish- (2.19, 3.86, 5.05) speaking students. Examination of the ranking of ASD within the language groups revealed ASD increased in prevalence for all language groups across the three academic years, with the exception of English, which stayed consistent at a ranking of sixth (Table 3.3). Somali-speaking students with ASD ranked highest compared to the other language groups: fourth in 2009-10 and 2012-13, and third in 2012-13. ASD was ranked seventh for Spanish- speaking students in 2006-07 and 2009-10, and then increased to fifth in 2012-13. For Hmong-speaking students, ASD was tied with EBD at a ranking of seventh in 2006-07, and then increased to sixth in 2009-10, and fifth in 2012-13. ASD increased in ranking for “Other”-speaking students as well, moving from fifth in 2006-07, to fourth in 2009-10 and 2012-13 (Table 3.3).

Deaf/Hard of Hearing

“Other”-speaking students had markedly higher prevalence rates in the category of D/HH compared to the other language groups across the three academic years at rates of 6.60, 6.40, and

5.70, respectively (Table 3.2). Hmong- (3.82, 3.96, 4.24) speaking students had the second highest prevalence rates across the three academic years, followed by Somali- (2.30, 2.15, 1.65), Spanish- (1.83, 2.17, 1.94), and English- (1.31, 1.34, 1.40) speaking students. D/HH was subsequently ranked higher for Hmong- and “Other”-speaking students at rankings between third and fifth across the three academic years. For English-, Spanish-, and Somali-speaking students, D/HH was ranked seventh to ninth across the three academic years (Table 3.3).

Developmental Cognitive Delay Mild

In the special education category DCD Mild, prevalence rates for the five language groups were similar. English-speaking students had the highest prevalence rates across the three academic years at 4.87, 4.63, and 4.16, followed closely by Spanish- (3.88, 3.87, 3.60), “Other”- (3.57, 3.64, 3.31), Somali- (3.03, 3.45, 4.03), and Hmong- (2.45, 2.77, 2.36) speaking students (Table 3.2). English- and “Other”-speaking student groups maintained their rankings for DCD Mild at seventh across the three academic years (Table 3.3). Hmong-speaking students, who had a ranking of fourth, had DCD Mild ranked higher than the other language groups in 2006-07, though their ranking decreased to fifth in 2009-10, and sixth in 2012-13. Spanish-speaking students who were DCD Mild decreased in ranking from sixth in 2006-07 and 2009-10, to seventh in 2012-13. Somali-speaking students were the only language group to experience an increase in ranking of DCD Mild from a ranking of sixth in 2006-07, to a ranking of fifth in 2009-10 and 2012-13 (Table 3.3).

Low Incidence Special Education Categories

Developmental Cognitive Delay Severe

Somali-speaking students had the highest prevalence rates in the category of DCD Severe across the three academic years (1.46, 2.42, 2.45, respectively). English- (1.43, 1.35, 1.26),

Spanish- (1.30, 1.19, 1.34), Hmong- (1.35, 1.30, 1.39), and “Other”- (1.41, 1.42, 1.43) speaking students had similar prevalence rates across the three academic years (Table 3.2).

Physical Impairment

In the Physical Impairment (PI) special education category, Somali-speaking students had the highest prevalence rates (1.20, 1.39, 1.34, respectively) compared to the other language groups. English-speaking students had the next highest prevalence rates at 1.13, 1.14, and 1.13 followed by Spanish- (0.98, 0.88, 0.92), “Other”- (0.91, 0.84, 1.18) and Hmong- (0.62, 0.84, 0.87) speaking students (Table 3.2).

Severely Multiply Impaired

In the category of Severely Multiply Impaired (SMI), Somali-speaking students had the highest prevalence rates 0.63, 1.48, and 1.41 across the three academic years. The other language groups had similar prevalence rates, with Spanish-speaking students having the next highest prevalence rates (0.47, 0.76, 0.84), followed by English- (0.41, 0.67, 0.82), “Other”- (0.40, 0.42, 0.62) and Hmong- (0.33, 0.58, 0.62) speaking students.

Traumatic Brain Injury, Blind-Visual Impairment, Deaf-Blind

The remaining special education categories (Traumatic Brain Injury (TBI), Blind-Visually Impaired (Blind-VI), and Deaf-Blind) ranked lowest and had the lowest prevalence rates across the five language groups and the three academic years. In the special education categories of TBI and Blind-VI, prevalence rates were consistent across language groups. In the category of Deaf-Blind, it was interesting to note that “Other”-speaking students had relatively higher prevalence rates (0.16, 0.33, 0.20) compared to the other language groups, which had prevalence rates less than or equal to 0.08 (Table 3.2; Table 3.3).

Change in Prevalence Rates Over Time

To answer the second question of how the population and prevalence rates of each language group changed from 2006-07 to 2012-13, percentage change was calculated for each language group in each of the 14 special education categories. The formula for this calculation included subtracting the language group's prevalence rate in 2006-07 from the prevalence rate in 2012-13, and then dividing by the prevalence rate in 2006-07. A negative value signifies a decrease in enrollment from 2006-07 to 2012-13 (Table 3.4).

Table 3.4. Percentage Change in Prevalence Rates by Language for each Special Education Category between the Academic Years 2006-07 to 2012-13

	English	Spanish	Hmong	Somali	Other
SLD	-10.89	22.60	8.26	-1.61	-11.24
SLI	-3.18	12.38	27.43	7.95	2.46
EBD	-2.88	18.18	21.88	-2.48	-1.58
OHI	19.34	19.44	-2.61	127.83	-3.30
DD	32.46	16.26	179.47	16.69	43.23
ASD	57.14	130.59	153.91	68.41	76.91
D/HH	-14.58	-7.22	-3.67	33.00	-7.28
DCD Mild	-2.10	49.23	214.07	13.01	304.26
DCD Severe	-3.82	-26.78	-63.61	6.52	-78.33
PI	0	-6.12	40.32	11.67	29.67
SMI	100	78.72	87.88	123.81	55.00
TBI	0	-36.36	-51.43	61.90	-50.00
Blind-VI	11.11	27.59	-39.39	-47.37	-27.27
Deaf-Blind	0	33.33	150.00	--	25.00

SLD and SLI changes in prevalence rates over time were variable across language groups. In SLD, English-, Somali-, and “Other”-speaking students had a decrease in enrollment (-10.89%, -1.61%, -11.24%, respectively) from 2006-07 to 2012-13, and Spanish- and Hmong-speaking students experienced an increase in enrollment (22.60%, and 8.26% respectively; Figure 3.3a). Prevalence rates for SLI decreased for English- (-3.18%) speaking students, but increased for Spanish- (12.38%), Hmong- (27.43%), Somali- (7.95%) and “Other”- (2.46%) speaking students (Table 3.4; Figure 3.3b).

EBD and OHI had some language groups increase in prevalence rates and some groups decrease from 2006-07-2012-13. In the EBD special education category, Hmong- (21.88%) speaking students experienced the greatest increase, followed by Spanish- (18.18%) speaking students. English- (-2.88%), Somali- (-2.48%), and “Other”- (-1.58%) speaking students experienced a decrease in prevalence rates in the EBD category. In the OHI special education category, Somali- (127.83%) speaking students experienced the greatest increases in prevalence rate, followed by Spanish- (19.44%) and English- (19.34%) speaking students. Hmong- (-2.61%) and “Other”- (-3.30%) speaking students experienced a decrease in prevalence rate in OHI.

The DD and ASD special education categories had increased prevalence rates from 2006-07 to 2012-13 (Table 3.4). In the DD category, Hmong- (179.47%) speaking students had the greatest increase in prevalence rate, followed by “Other”- (43.23%), English- (32.46%), Somali- (16.69%), and Spanish- (16.26%) speaking students. For ASD, although Hmong-speaking students prevalence rates were low they showed the greatest increase from 2006-07 to 2012-13 (153.91%), followed by Spanish- (130.59%), “Other”- (76.91%), Somali- (68.41%), and English- (57.14%) speaking students (Figure 3.3f).

The D/HH category showed variation in trends among language groups. Prevalence rates increased for Somali- (33.00%) speaking students, but decreased for English- (-14.58%), Spanish- (-7.22%), Hmong- (-3.67%), and “Other”- (-7.28%) speaking students (Figure 3.3g). For DCD Mild, as reflected in Figure 3.3h, “Other”- (304.26%) speaking students had a large increase in prevalence rates, as did Hmong- (214.07%), Spanish- (49.23%), and Somali- (13.01%) speaking students. English- (-2.10%) speaking students were the only group to experience a decrease in prevalence rate in DCD Mild.

Low Incidence Special Education Categories

Changes in prevalence rates for language groups were variable for the low incidence special education categories. In DCD Severe, Somali- (6.52%) speaking students were the only group to experience an increase in prevalence rates from 2006-07 to 2012-13. English- (-3.82%) Spanish- (-26.78%), Hmong- (-63.61%), and “Other”- (-78.33%) speaking students decreased in prevalence rates. In PI, “Other”- (29.67%), Hmong- (40.32%), and Somali- (11.67%) speaking students had increased prevalence rates, although prevalence rates for Spanish-speaking students decreased (-6.12%), and there was no change for English-speaking students. In SMI, prevalence rates of all language groups increased from 2006-07 to 2012-13 with Somali-speaking students having the greatest increase (123.81%), followed by English- (100.00%), Hmong- (87.88%), Spanish- (78.72%) and “Other”- (55.00%) speaking students.

In the TBI category, there was no change in prevalence rates of the English-speaking group. Somali- (61.90%) speaking students increased in prevalence, and Spanish- (-36.36%), Hmong- (-51.43%), and “Other”- (-50.00%) speaking groups decreased in prevalence over time. In the category of Blind-VI, prevalence rates for English- (11.11%) and Spanish- (27.59%) speaking students increased, while prevalence rates for Hmong- (-39.39%), Somali- (-47.37%) and “Other”- (-27.27%) speaking students decreased. Finally, for the category of Deaf-Blind, prevalence rates increased for Hmong- (150.00%), Spanish- (33.33%), and “Other”- (25.00%) speaking students. English- speaking students experienced no change in prevalence. Prevalence rates for Somali-speaking students increased, but could not be calculated due to their zero prevalence in 2006-07.

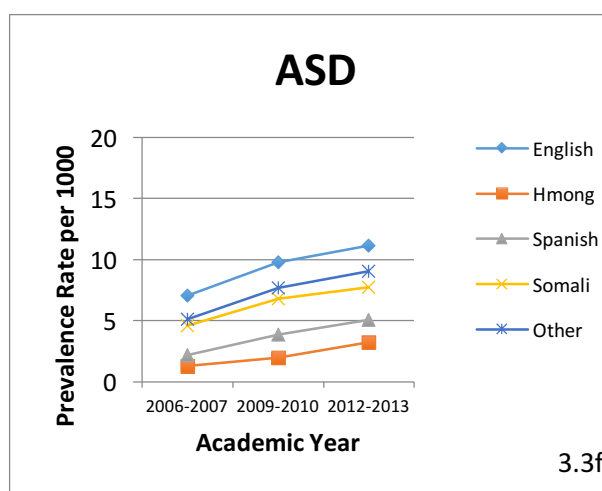
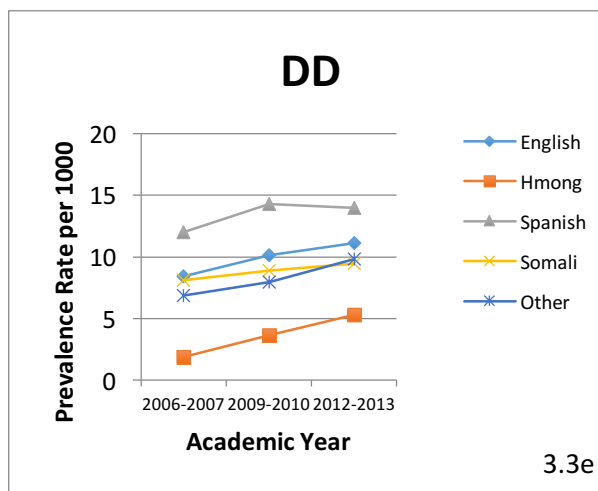
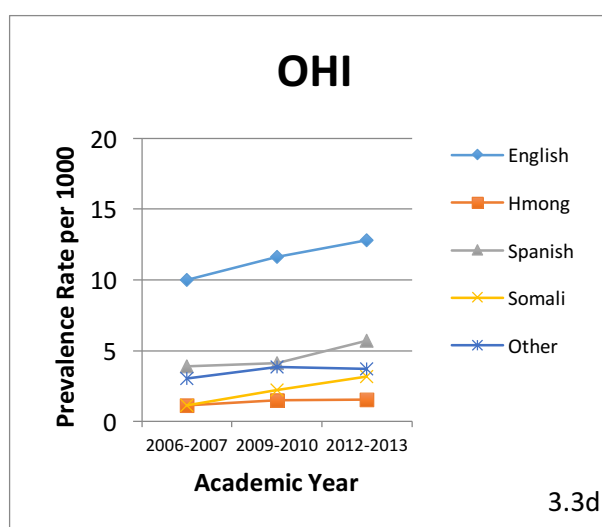
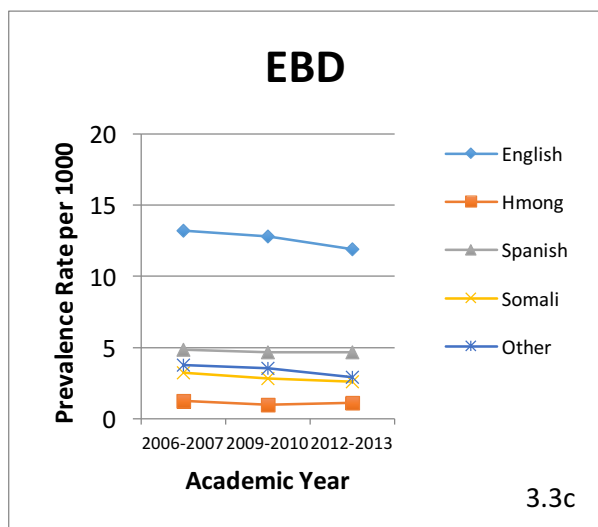
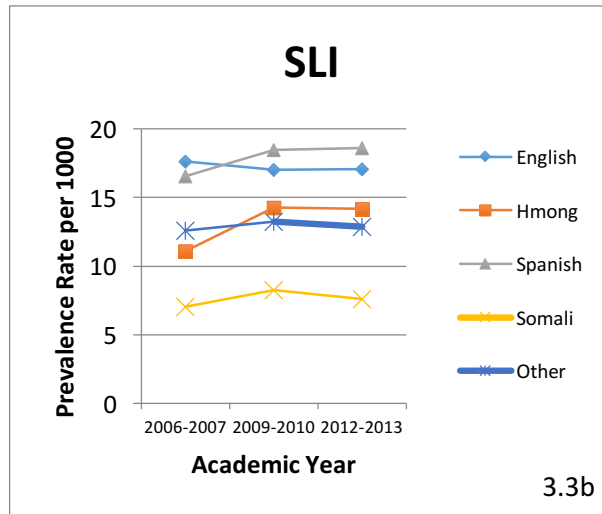
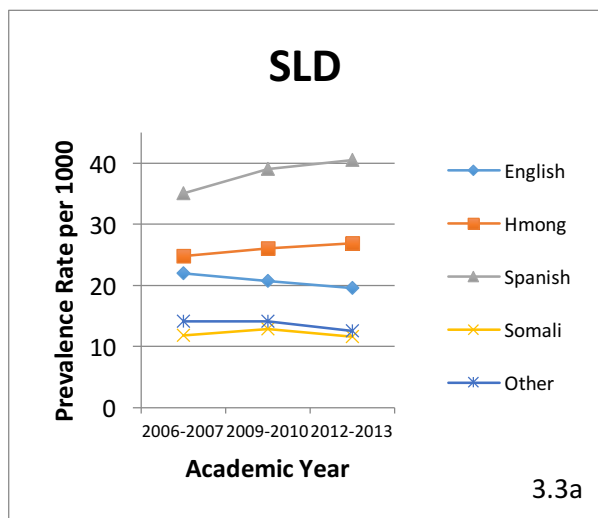


Figure 3.3 Prevalence Rates of Language Groups per 1000 students across the 2006-07 to 2012-13 Academic Years.

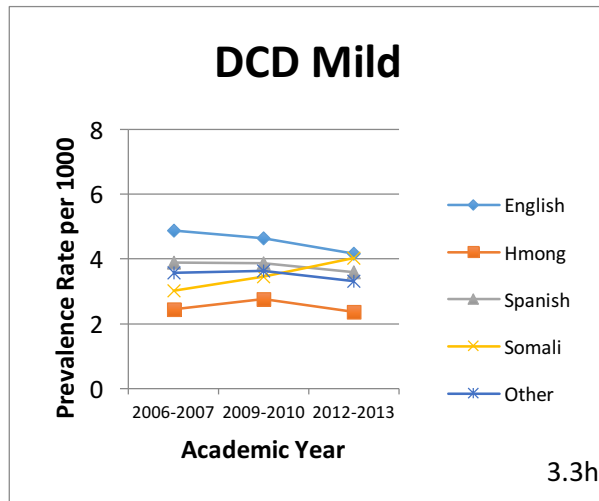
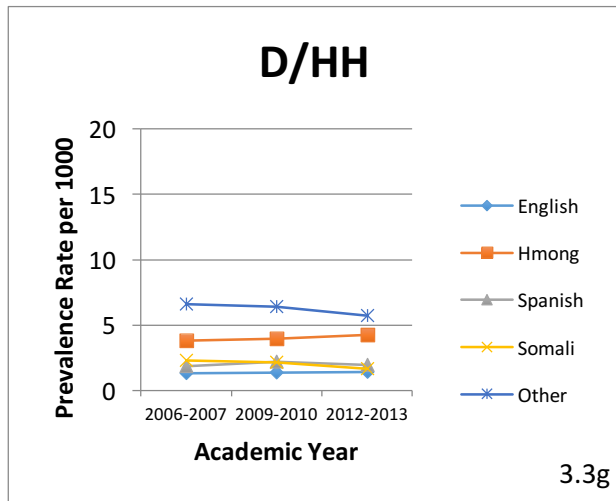


Figure 3.3 Continued.

Risk Ratios of ELL Students

To answer the third question about risk of disproportionality for Spanish-, Hmong-, Somali-, and “Other”- speaking groups compared to English-speaking students in the 14 special education categories in the 2006-07, 2009-10, and 2012-13 academic years, risk ratios (RR) were calculated. The formula for RR involves dividing the prevalence rate of each ELL group (i.e., Spanish, Hmong, Somali, and “Other”) per 1000 students by the prevalence rate of the EPL group per 1000 students. A value equal to 1.0 signified the ELL group was represented in the special education category to the same degree as the EPL group. Values greater than 1.0 signified over-representation of the ELL group compared to EPL students, and values less than 1.0 signified underrepresentation of the ELL group compared to EPL students. Table 3.5 reflects the results for the risk ratio calculations for the overall population in special education, and Table 3.6 reflects the RR broken down by special education category.

Table 3.5. Overall Risk Ratios of ELL Students Compared to EPL Students in Special Education.

Language Group	RR 2006-07	RR 2009-10	RR 2012-13
Spanish	0.93	1.02	1.05
Hmong	0.58	0.64	0.67
Somali	0.51	0.58	0.58
Other	0.67	0.70	0.69

Table 3.6. Risk Ratios of ELL Students Compared to EPL Students.

Home Language	Special Education Category RR per Year		
	2006-07	2009-10	2012-13
SLD Actual RR per Year			
Spanish	1.60	1.89	2.07
Hmong	1.13	1.26	1.37
Somali	0.54	0.62	0.59
Other	0.64	0.68	0.64
SLI Actual RR per Year			
Spanish	0.94	1.08	1.09
Hmong	0.63	0.84	0.83
Somali	0.40	0.48	0.45
Other	0.71	0.78	0.76

	2006-07	2009-10	2012-13
EBD Actual RR per Year			
Spanish	0.37	0.37	0.39
Hmong	0.10	0.08	0.09
Somali	0.25	0.22	0.22
Other	0.29	0.28	0.25
OHI Actual RR per Year			
Spanish	0.39	0.36	0.45
Hmong	0.12	0.13	0.12
Somali	0.11	0.19	0.25
Other	0.30	0.33	0.29
DD Actual RR per Year			
Spanish	1.42	1.41	1.25
Hmong	0.23	0.26	0.48
Somali	0.96	0.88	0.85
Other	0.81	0.79	0.88
ASD Actual RR per Year			
Spanish	0.18	0.20	0.29
Hmong	0.31	0.40	0.45
Somali	0.65	0.70	0.70
Other	0.72	0.79	0.81
DCD Mild Actual RR per Year			
Spanish	0.80	0.84	0.87
Hmong	0.50	0.60	0.57
Somali	0.62	0.74	0.97
Other	0.73	0.79	0.79
DCD Severe Actual RR per Year			
Spanish	0.91	0.88	1.06
Hmong	0.94	0.97	1.10
Somali	1.02	1.79	1.95
Other	0.98	1.06	1.13
D/HH Actual RR per Year			
Spanish	1.39	1.62	1.39
Hmong	2.91	2.97	3.03
Somali	1.75	1.61	1.18
Other	5.03	4.79	4.07
PI Actual RR per Year			
Spanish	0.86	0.77	0.81
Hmong	0.55	0.73	0.77
Somali	1.06	1.21	1.19
Other	0.80	0.74	1.04
SMI Actual RR per Year			
Spanish	1.13	1.12	1.02
Hmong	0.81	0.86	0.76
Somali	1.53	2.19	1.72
Other	0.97	0.63	0.76

	2006-07	2009-10	2012-13
TBI Actual RR per Year			
Spanish	1.02	0.67	0.66
Hmong	1.10	0.72	0.55
Somali	0.65	0.97	1.06
Other	0.68	0.44	0.34
Blind-VI Actual RR per Year			
Spanish	1.08	1.03	1.22
Hmong	1.22	0.69	0.66
Somali	1.73	0.74	1.00
Other	2.04	1.39	1.06
Deaf-Blind Actual RR per Year			
Spanish	0.95	2.31	1.16
Hmong	0.68	0.66	1.56
Somali	0.00	1.27	2.10
Other	4.87	9.50	6.19

- RR indicates over-representation in special education category (i.e., $RR > 1.20$)
- RR indicates under-representation in special education category (i.e., $RR < 0.80$)
- RR indicates proportional representation in special education category (i.e., $RR = 0.80$ - 1.20)

To be consistent with previous studies that included risk ratios, values between 0.80 and 1.20 were considered proportional to EPL student populations (Sullivan, 2011). Examination of Table 3.5 indicates Hmong-, Somali-, and “Other”-speaking students were underrepresented in special education when compared to EPL students across the three academic years (Hmong = 0.58, 0.64, 0.67, Somali = 0.51, 0.58, 0.58, Other = 0.67, 0.70, 0.69, respectively). Overall, Spanish-speaking students were considered to be proportionately represented when compared to EPL students across the three academic years (0.95, 1.03, 1.05, respectively). All language groups had relatively consistent RRs over the three years, although there was variation in some special education categories for some language groups.

Specific Learning Disability

In the special education category of SLD, Spanish- speaking students were overrepresented across the three academic years (1.60, 1.89, 2.07), and Somali- (0.54, 0.62, 0.59) and “Other”- (0.64, 0.68, 0.64) speaking students were underrepresented. In 2006-07, Hmong- speaking students were proportionately represented (1.13), though were overrepresented in 2009-10 (1.26) and 2012-13 (1.37; Figure 3.3a). RRs over time in the category of SLD increased for Spanish-, Hmong-, and Somali-speaking students across the three academic years (Table 3.6).

Speech Language Impairment

In the special education category of SLI, representation of Spanish-speaking students was proportional to English-speaking students across the three academic years (0.94, 1.08, 1.09), and Hmong-speaking students were proportional to English-speaking students in 2009-10 (0.84), and 2012-13 (0.83). Hmong-speaking students were underrepresented in 2006-07 (0.63; Figure 3.3b). Somali- and “Other”-speaking students were underrepresented with RR values ranging from 0.40-0.48 for Somali-speaking students, and 0.71-0.78 for “Other”-speaking students across the three academic years. Although RRs for Spanish-speaking students across the three academic years indicated proportional representation, the RR’s did slightly increase during those years (0.94, 1.08, 1.09; Table 3.6).

Emotional Behavioral Disorder

In the special education category of EBD, all language groups were underrepresented across the three academic years (Table 3.6; Figure 3.3c). Hmong- (0.10, 0.08, 0.09) speaking students had the greatest risk of underrepresentation in this special education category, followed by Somali- (0.25, 0.22, 0.22), “Other”- (0.29, 0.28, 0.25), and Spanish- (0.37, 0.37, 0.39)

speaking students. For “Other”-speaking students, there was a consistent decrease in their RR, signifying increased risk for underrepresentation in EBD over time.

Other Health Impairment

OHI had similar RR results as the EBD category. That is, all language groups were underrepresented across the three academic years (Figure 3.3d), with Hmong- (0.12, 0.13, 0.12) speaking students having the lowest RR’s, followed by Somali- (0.11, 0.19, 0.25), “Other”- (0.30, 0.33, 0.29) and Spanish- (0.39, 0.36, 0.45) speaking students. RR for Spanish-speaking students decreased from 2006-07 to 2009-10, then increased in 2012-13. Somali-speaking students experienced a steady increase in RR from 2006-07 to 2012-13, bringing them closer to proportionate representation.

Developmental Delay

Spanish- (1.42, 1.41, 1.25) speaking students were consistently overrepresented in the special education category of DD (Table 3.6; Figure 3.3e) across the three academic years, and Hmong- (0.23, 0.26, 0.48,) speaking students were consistently underrepresented. Somali- (0.96, 0.88, 0.85) speaking students were proportionately represented with EPL students across the three academic years. Spanish- and Somali-speaking students exhibited a decrease in RR across the three academic years, while Hmong-speaking students experienced an increase in RR across the three academic years.

Autism Spectrum Disorder

In the special education category of ASD (Figure 3.3f), all language groups were determined to be underrepresented across the three academic years with the exception of “Other”- (0.81) speaking students in 2012-13, who were proportionately represented. Spanish- (0.18, 0.20, 0.29) speaking students had the greatest risk for underrepresentation, followed by

Hmong- (0.31, 0.40, 0.45), Somali- (0.65, 0.70, 0.70) and “Other”- (0.72, 0.79, 0.81) speaking students. RRs for all language groups increased across the three academic years, possibly a positive indicator that they were moving toward proportional representation with EPL students, especially the Somali-speaking students with a RR of 0.70 in 2012-13.

Deaf/Hard of Hearing

In the special education category of D/HH (Figure 3.3g), all language groups were determined to be overrepresented when compared to English-speaking students across the three academic years, with the exception of Somali-speaking students in 2012-13 (Table 3.6). “Other”- (5.03, 4.79, 4.07) speaking students were overrepresented to the greatest degree, followed by Hmong- (2.91, 2.97, 3.03), Spanish- (1.39, 1.62, 1.39), and Somali- (1.75, 1.61, 1.18) speaking students. Hmong-speaking students were the only language group to experience an increase in RR across the three academic years. Somali- and “Other”-speaking students experienced a decrease in RR across the three academic years, and Spanish-speaking students experienced an increase from 2006-07 to 2009-10, then decreased in 2012-13.

Developmental Cognitive Disability Mild

Spanish- (0.80, 0.84, 0.87) speaking students were proportionately represented with English-speaking students in the category of DCD Mild (Figure 3.3h) across the three academic years. Somali- speaking students were proportionately represented with English-speaking students in 2012-13 (0.97), though had been underrepresented in 2006-07 (0.62) and 2009-10 (0.74). Hmong- (0.50, 0.60, 0.57) and “Other”- (0.73, 0.79, 0.79) speaking students were underrepresented across the three academic years. RRs for Spanish-, Somali-, and “Other”- speaking students increased from 2006-07 to 2012-13, moving closer to a proportionate value of

1.00. RRs for Hmong-speaking students increased from 2006-07 to 2009-10, but then slightly decreased from 2009-10 to 2012-13 (Table 3.6).

Low Incidence Special Education Categories

Developmental Cognitive Delay Severe

In the special education category of DCD Severe, Spanish-, Hmong-, and “Other”-speaking students were proportionately represented with EPL students across the three academic years, and Somali-speaking students were proportionately represented in 2006-07 with EPL students (Table 3.6). However, from 2006-07 to 2012-13, Somali-speaking students’ RR almost doubled (1.02, 1.95, respectively) and they were overrepresented when compared to EPL students. RRs for all language groups increased from 2006-07 to 2012-13 (Table 3.6).

Physical Impairment

Hmong- (0.55, 0.73, 0.77) speaking students were consistently underrepresented in the special education category of PI across the three academic years. Spanish- and “Other”-speaking students were underrepresented in 2009-10 (0.77, 0.74, respectively), but proportionately represented in 2006-07 (0.86, 0.80, respectively) and 2012-13 (0.81, 1.04, respectively). Somali-speaking students were proportionately represented in 2006-07 (1.06) and 2012-13 (1.19), and overrepresented in 2009-10 (1.21). RRs for Hmong-speaking students gradually increased across the three academic years, bringing them closer to proportionate representation with EPL students. RRs for Spanish- and “Other”-speaking students decreased from 2006-07 to 2009-10, leading to underrepresentation in 2009-10, but increased to a proportional RR in 2012-13. RRs for Somali-speaking students spiked from 2006-07 to 2009-10, leading to overrepresentation in 2009-10, however, the group’s RR then decreased in 2012-13, which returned them to the proportionate range (Table 3.6).

Severely Multiply Impaired

In the special education category of SMI, Somali- (1.53, 2.19, 1.72) speaking students were consistently overrepresented across the three academic years. Hmong-speaking students were underrepresented in 2012-13 (0.76), and “Other”-speaking students were underrepresented in 2009-10 (0.63), and 2012-13 (0.76). Spanish-speaking students were proportionately represented with EPL students across the three academic years (1.13, 1.12, and 1.02). Hmong-speaking students were proportionately represented in 2006-07 (0.81), and 2009-10 (0.86), and “Other”-speaking students were proportionately represented in 2006-07 (0.97). RRs over time in the special education category of SMI revealed a consistent decrease in RR for Spanish-speaking students, while Hmong- and Somali-speaking students increased from 2006-07 to 2009-10, then decreased from 2009-10 to 2012-13. “Other”-speaking students showed an opposite trend, where there was a decrease in RR from 2006-07 to 2009-10, followed by an increase in 2009-10 to 2012-13 (Table 3.6).

Traumatic Brain Injury

In the special education category of TBI, language groups were either proportionately represented, or underrepresented across the three academic years. Spanish- and Hmong-speaking students were proportionately represented in 2006-07 (1.02, 1.10, respectively), and underrepresented in 2009-10 and 2012-13 (Spanish = 0.67, 0.66, Hmong = 0.72, 0.55). Somali-speaking students were underrepresented in 2006-07 (0.65), and proportionately represented in 2009-10 and 2012-13 (0.97, 1.06, respectively). “Other”- (0.68, 0.44, 0.34) speaking students were underrepresented across the three academic years. Examination of RRs over time revealed an increase for Somali-speaking students across the three academic years, and a decrease across the three academic years for Spanish-, Hmong-, and “Other”-speaking students.

Blind-Visually Impaired

Variability in RRs were noted in the special education category of Blind-VI. Spanish-speaking students were proportionately represented in 2006-07 (1.08) and 2009-10 (1.03), and overrepresented in 2012-13 (1.22). Hmong-speaking students were overrepresented in 2006-07 (1.22), and underrepresented in 2009-10 and 2012-13 (0.69, 0.66, respectively). Somali-speaking students were overrepresented in 2006-07 (1.73), underrepresented in 2009-10 (0.74), and then proportionately represented in 2012-13 (1.00). “Other”-speaking students were overrepresented in 2006-07 and 2009-10 (2.04, 1.39, respectively), and proportionately represented in 2012-13 (1.06). RRs over time decreased for Hmong- and “Other”-speaking students across the three academic years. For Spanish- and Somali-speaking students, there was a decrease from 2006-07 to 2009-10, followed by an increase in RR from 2009-10 to 2012-13.

Deaf-Blind

“Other”-speaking students were overrepresented in the special education category Deaf-Blind with RRs of 4.87, 9.50, and 6.19 across the three academic years, respectively. Spanish-speaking students were overrepresented in 2009-10 (2.31), Hmong-speaking students were overrepresented in 2012-13 (1.56), and Somali-speaking students were overrepresented in 2009-10 (1.27), and 2012-13 (2.10). Hmong- and Somali-speaking students were underrepresented in 2006-07 (0.68, 0.00, respectively), and Hmong-speaking students were also underrepresented in 2009-10 (0.66). Spanish-speaking students were proportionately represented to EPL students in 2006-07 (0.95), and 2012-13 (1.16). Somali-speaking students had a gradual increase in RR from 2006-07 to 2012-13. RRs for Spanish- and “Other”-speaking students increased from 2006-07 to 2009-10, followed by a decrease from 2009-10 to 2012-13. RRs for

Hmong-speaking students decreased from 2006-07 to 2009-10, followed by an increase in 2009-10 to 2012-13 (Table 3.6).

ANOVA Results

In order to answer question four regarding if there are significant differences in prevalence rates within and across special education categories, an analysis of variance (ANOVA) was completed for the 14 special education categories in each of the three academic years (2006-07, 2009-10, and 2012-13). ANOVA is a form of statistical hypothesis testing that compares the means, in this case prevalence rates, of two or more groups to determine if there is a significant difference between the groups.

Results of the ANOVA (Table 3.7) for the academic year 2006-07 indicate significant differences in language group prevalence rates for 11 out of 14 of the special education categories – SLD, SLI, EBD, OHI, DD, ASD, DCD Mild, D/HH, PI, Blind-VI, and Deaf-Blind. This left DCD Severe, SMI, and TBI as the categories that did not have a significant difference between language groups. In 2009-10, SLD, SLI, EBD, OHI, DD, ASD, DCD Mild, D/HH, Deaf-Blind, and now DCD Severe and SMI had significant differences in prevalence rates of language groups. There was no significant difference between language groups in the category of PI, TBI or Blind-VI (Table 3.7). In 2012-13, there continued to be no significant difference between language groups in the categories of PI and Blind-VI. Results indicate a significant difference between language groups in the remaining 12 special education categories (Table 3.7).

Table 3.7. Results of the ANOVAs to Compare Language Group (English, Spanish, Hmong, Somali, “Other”) Representativeness in each of the 14 Special Education Categories in the 2006-07, 2009-10, and 2012-13 Academic Years.

Special Education Category	2006-07 (df = 4, 1656477)		2009-10 (df = 4, 1646001)		2012-13 (df = 4, 1661187)	
	F-Value	Level of Significance	F-Value	Level of Significance	F-Value	Level of Significance
SLD	189.132	0.000	352.448	0.000	527.525	0.000
SLI	74.243	0.000	44.286	0.000	63.218	0.000
EBD	322.357	0.000	342.756	0.000	344.936	0.000
OHI	241.829	0.000	293.072	0.000	329.838	0.000
DD	86.469	0.000	84.313	0.000	50.146	0.000
ASD	115.585	0.000	138.785	0.000	131.208	0.000
DCD Mild	23.196	0.000	13.937	0.000	11.539	0.000
DCD Severe	0.235	0.918	5.108	0.000	8.351	0.000
D/HH	257.620	0.000	258.830	0.000	217.245	0.000
PI	3.388	0.009	3.245	0.011	1.735	0.139
SMI	0.832	0.505	6.972	0.000	4.467	0.001
TBI	0.631	0.640	2.203	0.066	3.526	0.007
Blind-VI	4.127	0.002	1.091	0.359	0.671	0.612
Deaf-Blind	5.691	0.000	26.389	0.000	11.018	0.000

Tukey’s HSD Results for SLD, SLI, ASD, and D/HH

To further explore how language groups differed from each other (Question 5), Tukey’s Honest Significance Difference (HSD) Test was used. Due to the large amount of data, the post hoc analysis was limited to the special education categories most closely related to speech-language pathology (i.e., SLD, SLI, ASD, and D/HH).

Specific Learning Disability

Tukey’s HSD post hoc analysis reported significant differences in prevalence rates between English-, Spanish-, and Hmong-speaking students, but not between Somali- and “Other”-speaking students across the three academic years. These results align with risk ratios for Spanish- and Hmong-speaking students who were overrepresented in SLD, and Somali- and “Other”-speaking students who were underrepresented in SLD compared to the EPL group

(Table 3.8). Results also indicate that prevalence rates between Spanish and Hmong, Spanish and Somali, Spanish and “Other”, Hmong and Somali, and Hmong and “Other” were significantly different from each other across the three academic years. One can gain a better understanding of these differences by reviewing Figure 3.3a.

Table 3.8. Results of Tukey’s HSD Significance Values between Language Groups in SLD in each Academic Year.

	2006-07				2009-10				2012-13			
	English PR = 0.022 Spanish PR = 0.035 Hmong PR = 0.025 Somali PR = 0.012 Other PR = 0.014				English PR = 0.021 Spanish PR = 0.039 Hmong PR = 0.026 Somali PR = 0.013 Other PR = 0.014				English PR = 0.200 Spanish PR = 0.041 Hmong PR = 0.027 Somali PR = 0.012 Other PR = 0.013			
	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.
Spa.	0.000	--	--	--	0.000	--	--	--	0.000	--	--	--
Hmo.	0.000	0.000	--	--	0.000	0.000	--	--	0.000	0.000	--	--
Som.	0.000	0.000	0.000	--	0.000	0.000	0.000	--	0.000	0.000	0.000	--
Oth.	0.000	0.000	0.000	0.324	0.000	0.000	0.000	0.775	0.000	0.000	0.000	0.866

Speech-Language Impairment

Tukey’s HSD indicated Hmong-, Somali- and “Other”-speaking students were significantly different from the English-speaking group. In 2006-07, prevalence rates for Spanish- and English-speaking students were not significantly different from each other, though over time, prevalence rates for Spanish-speaking students increased, whereas prevalence rates for English-speaking students decreased resulting in Spanish-speaking students moving toward significant overrepresentation in 2012-13. Hmong- and “Other”-speaking students were proportionately represented across the three academic years, though all other language groups were significantly different from each other (Table 3.9).

Table 3.9. Results of Tukey's HSD Significance Values between Language Groups in SLI in each Academic Year.

	2006-07				2009-10				2012-13			
	English PR = 0.018 Spanish PR = 0.017 Hmong PR = 0.011 Somali PR = 0.007 Other PR = 0.013				English PR = 0.017 Spanish PR = 0.019 Hmong PR = 0.014 Somali PR = 0.008 Other PR = 0.013				English PR = 0.017 Spanish PR = 0.019 Hmong PR = 0.014 Somali PR = 0.008 Other PR = 0.013			
	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.
Spa	0.259	--	--	--	0.024	--	--	--	0.007	--	--	--
Hmo.	0.000	0.000	--	--	0.000	0.000	--	--	0.000	0.000	--	--
Som.	0.000	0.000	0.002	--	0.000	0.000	0.000	--	0.000	0.000	0.000	--
Oth.	0.000	0.000	0.405	0.000	0.000	0.000	0.704	0.000	0.000	0.000	0.517	0.000

Autism Spectrum Disorder

The post-hoc analysis indicated the EPL group in ASD was significantly different from the other four language groups. When prevalence rates for ELL groups are reviewed, one finds that all ELL groups examined are underrepresented, and the difference is significant across the three academic years. The Spanish- and Hmong-, and Somali- and "Other"- speaking groups were not significantly different from each other across the three academic years (Table 3.10).

Table 3.10. Results of Tukey's HSD Significance Values between Language Groups in ASD in each Academic Year.

	2006-07				2009-10				2012-13			
	English PR = 0.007 Spanish PR = 0.002 Hmong PR = 0.001 Somali PR = 0.005 Other PR = 0.005				English PR = 0.010 Spanish PR = 0.004 Hmong PR = 0.002 Somali PR = 0.007 Other PR = 0.008				English PR = 0.011 Spanish PR = 0.005 Hmong PR = 0.003 Somali PR = 0.008 Other PR = 0.009			
	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.	Eng.	Spa.	Hmo.	Som.
Spa.	0.000	--	--	--	0.000	--	--	--	0.000	--	--	--
Hmo.	0.000	0.363	--	--	0.000	0.010	--	--	0.000	0.030	--	--
Som.	0.000	0.003	0.000	--	0.000	0.000	0.000	--	0.000	0.001	0.000	--
Oth.	0.000	0.000	0.000	0.943	0.000	0.000	0.000	0.767	0.000	0.000	0.000	0.350

Chapter IV: Discussion

This retrospective study of prevalence rates in Minnesota public schools extends previous research by examining proportionality in special education based on home languages rather than race or socioeconomic status. In addition, five language groups (English, Spanish, Hmong, Somali, and “Other”), and 14 disability categories were examined, whereas previous researchers have limited their analysis to one or two language groups, or ELL versus non-ELL, and the high incidence special education categories (e.g., SLD, SLI, EBD). Finally, data that spans six academic years were analyzed, which provided a glimpse of academic trends over time.

Results of this study indicate that in the state of Minnesota students are disproportionately represented in special education based on their home language, with disproportionality, mainly underrepresentation, occurring in 9 of the 14 special education categories across all three academic years. In this discussion, I will summarize the findings of this study, address challenges with disproportionality in general, and with SLD, SLI, ASD, and D/HH specifically. I will also explore available information on how to resolve the issue of disproportionality.

Disproportionality in Minnesota Public Schools

Overall, English- and Spanish-speaking students were equally represented in special education, whereas Somali-, Hmong-, and “Other”- speaking students experienced lower representation in special education. Although there was an overall decrease in prevalence for English- and Hmong-speaking students from 2006-07 to 2012-13, and an increase for Spanish-, Somali-, and “Other”-speaking students, prevalence rates in special education increased for all language groups in those years. To date, no published study has examined all special education categories for proportionality of language groups, though studies that examined representation of

ELLs in “high-incidence” special education categories have reported overrepresentation of ELL students (Artiles et al., 2005; Sullivan, 2011).

Disproportionality of ELL students was present in 9 of the 14 special education categories (SLD, SLI, EBD, OHI, DD, ASD, DCD Mild, D/HH, and Deaf-Blind) across the three academic years. In SLD, there was overrepresentation of Spanish- and Hmong-speaking students, and underrepresentation of Somali- and “Other”-speaking students. In SLI, EBD, OHI, ASD, and DCD Mild, there was significant underrepresentation of ELL students across the three academic years. In the DD special education category, there was overrepresentation of Spanish-speaking students, and underrepresentation of Hmong-speaking students across the three academic years, and in the D/HH special education category there was significant overrepresentation of Spanish, Hmong, and “Other” language groups. Thus, this study demonstrates that Minnesota ELL students are not represented in special education to the same degree as their EPL peers. The question now becomes why this disproportionality exists.

General Disproportionality

Special Education Process

There are many steps in the special education process where potential misidentification of ELL students as special education students can lead to disproportionate representation. To begin, the identification process for students in need of special education begins with a referral. Previous research indicates that not all education professionals are aware of when it is appropriate to refer an ELL student for special education services, and school district administrators have acknowledged the difficulty in distinguishing a *difference* versus a *disorder*, though they have not taken action to set guidelines to clarify the definitions for special education teams (DeMatthews, et al., 2014). Studies have shown that federal, state, and district

rules/regulations regarding ELL enrollment in special education are broad and do not give sufficient information for the identification and assessment process for ELL students as potential special education students. Therefore, professionals in school settings have various policies and beliefs about when, why, and how to refer an ELL student for special education (DeMatthews et al., 2014).

Following a referral, the next step in the special education process is assessment of the child's abilities in the area he/she is experiencing difficulty to determine if he/she presents with a disorder. For special education providers working with children and families who speak languages other than English, the assessment process may be perceived as complex. It becomes crucial that the evaluating professional distinguishes a student's language and cultural differences from and a biological-cognitive based disorder in order to report an accurate measurement of the student's abilities. Standardized assessments typically used to qualify students for special education services generally do not account for the language development patterns of a bilingual speaker, the normal language variability of bilingual speakers, and differences in cultural experiences (Muñoz et al., 2014). Researchers have criticized the use of standardized assessments for ELL students, stating the test becomes a measure of English-language proficiency rather than a true assessment measure for the skill area being targeted (Skiba et al., 2008). In order to truly measure an ELL student's ability level and need for special education services, assessment materials, protocols, and procedures should be provided in the student's dominant and secondary language, and cultural norms should be considered (DeMatthews et al., 2014).

Based on assessment results, a student either qualifies for special education services and an individualized education program (IEP) is developed, or the student does not qualify and

he/she resumes attending school in the general education curriculum. Within the general education curriculum, language-learning programs (e.g., English as a second language; ESL) are available to support ELL students in English language acquisition. These programs may include pull-out services where the ELL students attend lessons in an ELL classroom, or push-in programs where an ELL teacher provides lessons within the general education classroom (Romero, 2014). More research is needed to determine the extent to which ELL students benefit from special education and language acquisition programs, if one special education category (e.g., SLD vs. SLI) provides greater benefit, if enrollment in special education has aversive effects on ELL students' social and academic performances overall, and if special education enrollment impacts a student's enrollment in ESL services.

State Policies on ESL/Bilingual Education

State policies regarding bilingual education have been examined in previous research to discern if they impact proportionality of students from different language groups in special education. In 2001, the *Elementary and Secondary Education Act* PL 89-10, 79 Stat. 27, 20 U.S.C. ch. 70 was reauthorized as the *No Child Left Behind Act* (NCLB), PL 107-110 leading to a shift in the main objective of bilingual education programs from native and home language maintenance to English acquisition (Romero, 2014). In addition, NCLB "drastically cut funding for bilingual programs, limited the length of these programs, and did not endorse the three criteria set up by the *Castenda v. Pickard* case..." (Romero, 2014, p. 15). The three criteria established by *Castenda v. Pickard* included: 1) sound educational theory must be the foundation of school programs for ELLs; 2) implementation of bilingual programs must include adequate resources, personnel, and fidelity; and 3) continuous monitoring of student progress in language acquisition and academic performance to ensure adequate results are achieved (Romero, 2014).

With these changes and deviance from “best practice” bilingual education guidelines, it is arguable that NCLB has failed to adequately support ELLs in the academic setting (Romero, 2014). The present study may provide pivotal data regarding over- and underrepresentation of ELL students to help guide policy formation in ELL education.

Research has indicated that enrollment in ESL or Bilingual Education (BE) programs impacts an ELL student’s probability of enrollment in special education programs, especially for SLD. Shifrer, Muller, and Callahan (2011) reported that students in ESL courses had a 1.55% greater chance of identification for SLD services in comparison to students who were not enrolled in ESL services. However, the authors were unable to determine the temporal order of identification (i.e., was a student in ESL classes before or after being identified with a SLD), leading them to three hypotheses: 1) English language learning struggles were misperceived as SLD, 2) ESL placement limited learning opportunities for students resulting in lower achievement, or 3) a student’s enrollment in ESL services brought them to the attention of educators increasing their chance of dual identification (Shifrer et al., 2011).

Romero (2014) also reported that in a school district in a southwest state there was a significantly lower proportion of ELL students identified with a disability in alternative language services (ALS; a broad term used to describe language programs for ELLs) compared to ELL students not identified with a disability. Similar to the findings of Shifrer and colleagues (2011), Romero reported students identified with SLD had a significantly higher representation in ALS compared to students identified with other primary disability codes. However, similar to Shifrer and colleagues, a temporal order of enrollment was not established. While the present study does not test these hypotheses, they add to the body of evidence about the challenges and inequities in

serving ELL students. More research is needed to determine causal factors for disproportionality and risk is greatly needed.

Although the present study clearly shows that disproportionality exists among ELL students in Minnesota, the state has made some changes. In 2011, the MDE adopted the World-Class Instructional Design and Assessment (WIDA) standards. These standards emphasize ELL language development that is focused on academic content areas (e.g., math, social studies), and uses the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs), a secure, large-scale English proficiency test to identify ELL students (Minnesota Minority Education Partnership Inc., 2012). The MDE has established criteria for ELL identification and English acquisition programs in accordance with NCLB for all districts to follow. These criteria include: “1) identification and MARSS classification, 2) placement into a program with an articulated amount and scope of service, 3) parent communication and engagement, 4) annual assessment of progress in English language proficiency – ACCESS for ELLs, and 5) Exit and MARSS reclassification” (Al Nouri, 2015, p. 17). Historically, Minnesota has noted a decrease in ELL dropout rates from 17% in 2006 to 10.2% in 2011, though as of 2011 there was still a 6% gap in dropout rates between ELL students and non-ELL students. With WIDA now implemented, the expectation is the gap between ELLs and non-ELLs will decrease (Minnesota Minority Education Partnership Inc., 2012).

ELL student enrollment in language acquisition programs (ESL, BE, ALS) in Minnesota was beyond the scope of the present study. However, perusal of published research revealed no studies regarding Minnesota trends for ELL student enrollment in special education and language acquisition programs. Future research should investigate if a correlation between ELL

identification and special education enrollment in Minnesota exists, as previous studies have noted a relationship in other states (Romero, 2014; Shifrer et al., 2011), and Minnesota has recently changed their policies regarding ELL programs.

Disproportionality in Special Education Categories

Speech-Language Impairment

SLI is broad special education category that includes articulation, language, fluency, voice, resonance, and phonological disorders. A speech-language pathologist (SLP) is responsible for diagnosing and treating children who are classified with a SLI. Standardized, norm-referenced, and criterion referenced assessments are typically used to determine if a student has a speech/language disorder. However, if a test is not available, there are other options available to qualify a student for special education services (Appendix A). In the present study, Spanish- and English-speaking students were equally represented across the academic years, and Hmong-, Somali-, and “Other”-speaking students were significantly underrepresented across the three academic years. These results were consistent with other studies, which found ELL students (language not specified) to be underrepresented at the elementary district level (Artiles et al., 2005), and equal representation of ELL students at the district level (Romero, 2014).

The cause of a speech-language disorder is unknown, though the American Speech-Language-Hearing Association (ASHA) identified potential contributing factors to a preschool language disorder including family history (genetics), premature birth, low birth-weight, hearing loss, autism, intellectual disabilities, syndromes (e.g., Down syndrome, Fragile X syndrome), fetal alcohol spectrum disorder, stroke, brain injury, tumors, cerebral palsy, poor nutrition, and failure to thrive (ASHA, 2015c). The diagnosis of SLI is made when a child’s language development is deficient for no apparent reason, he/she demonstrates challenges with articulation

and intelligibility, and/or he/she has deviant voice or fluency characteristics. The leading theory is that disorders that fall under SLI are caused by a combination of genetics and environmental factors that affect the child's development (Bishop, 2006).

Diagnosis of an ELL student with SLI is challenging because the SLP must discern what language characteristics are due to a disorder, and which are due to the student's bilingual language status. Unfortunately, bilingual language assessment is rarely realistic because there are few bilingually trained SLPs, and even if an SLP who speaks the student's home language is available, there are limited norm-referenced bilingual assessment materials that can be used to qualify a student for services (Paradis, 2014). According to ASHA (2014), 5% (7,214 out of 161,163) of audiologists, SLPs, speech-language and hearing scientists, and audiology and SLP support personnel in the United States identify themselves as bilingual care providers. Of that 5%, 6,491 were ASHA certified SLPs, and 189 were ASHA certified audiologists. In the state of Minnesota, the Minnesota Speech Language Hearing Association (MSHA; 2013) reported 57 bilingual SLPs and audiologists; 32 Spanish-English bilinguals, 1 Hmong-English bilingual, and 23 "Other" (e.g., ASL, French, German, Mandarin) language bilinguals.

Researchers and SLPs have collaborated to develop dynamic assessment models designed specifically for bilingual students. In these models, a pre-referral process is recommended where the SLP will meet with a child to determine his/her language learning potential rather than current language knowledge, which is intermixed with their cultural experiences. This can be done through informal assessment/therapy probes where the SLP structures the environment to determine the level of support the student needs to learn language skills in his/her native language (with the help of an interpreter), and English. It is important for the SLP to examine the

student's language abilities in all their languages because SLI may only be diagnosed if deficits are present across all languages (ASHA, 2015c).

The proportionality of Spanish-speaking students to English-speaking students reported in the present study shows promising results for future proportionality of ELL students. As mentioned previously, the majority of bilingual SLPs in Minnesota are Spanish-English bilinguals (MSHA, 2013), and Spanish is the second most common language spoken in the United States (Ryan, 2013) and in Minnesota. Romero (2014) reported a significant difference between Spanish bilingual students receiving ALS and their non-Spanish bilingual peers, hypothesizing the availability of Spanish-English bilingual instructors and resources accounted for increased enrollment of Spanish-English bilingual students. Proportionality of Spanish- and English-speaking students in SLI, and increased enrollment of Spanish-speaking students in ALS are positive indicators that with proper education and training of professionals, and bilingual resources, ELL students can be identified proportionately for special education services. It is therefore important to educate, train, and produce materials in other languages to support proportionality of other language groups.

Specific Learning Disability

SLD is a difficult special education category to study because it encompasses many skill areas, has varying definitions, and the diagnostic criteria is variable across settings.

Disproportionate identification within the category of SLD is considered a central problem to the education system because: "(a) Students may be referred to special education in response to issues other than a learning disability, (b) the identification process may be inconsistent and/or inaccurate, and (c) the disproportionately under-identified may not receive services" (Shifrer et al., 2011, p. 247). In the present study, disproportionate representation of ELL students in SLD

was found across the three academic years. Spanish- and Hmong-speaking students were significantly overrepresented, and Somali- and “Other”-speaking students were significantly underrepresented compared to the EPL population. Findings for Spanish- and Hmong-speaking students are consistent with those reported in other studies that found overrepresentation of ELLs in SLD at the district level (Artiles et al., 2005; Romero, 2014), and at the state level (Sullivan, 2011). However, the finding that Somali- and “Other”- speaking students were underrepresented indicates the importance of examining proportionality among specific language groups rather than aggregating findings for all ELL students. Indeed, disproportionate representation that varies across language groups strongly suggests that there are different variables that influence over- versus underrepresentation of each language group.

The cause of SLD is unknown, though the dominant assumption is “some children have biologically-based cognitive deficits or cognitive dysfunctions that hinder their adequate acquisition of fundamental academic skills” (Büttner & Hasselhorn, 2011, p. 78-79). However, researchers have not been able to link specific cognitive dysfunctions directly to SLDs, and there is uncertainty if identified cognitive deficits cause SLDs, are a result of SLDs, or are a covariate of the overall disability (Büttner & Hasselhorn, 2011).

For education professionals, the task of identifying an ELL student as having a learning disability is challenging for three reasons. First, there are overlapping characteristics of ELL and SLD students that make it difficult to discern the cause of a student’s challenges (Ortiz, 1997). These characteristics may include errors in the student’s syntax or pragmatics, challenges with literacy-related activities (e.g., problem solving, synthesis, analysis of information), and difficulties with narrative activities (e.g., organization of information, sequencing of events, drawing conclusions, and evaluating actions). Both ELL students and students with SLD may

have difficulties in these academic areas, though the reason for the difficulty is different and thus intervention should be structured appropriately to address the child's root problem (Ortiz, 1997).

The second reason that accurately identifying ELLs with SLD is challenging is that education providers must indicate the student's current level of English proficiency, which may be difficult to determine by simply interviewing the student or asking the parent or teacher. Two general levels of language proficiency have been identified: Basic Interpersonal Communication Skills (BICS), and Cognitive Academic Language Proficiency (CALP). BICS are a student's ability to communicate with his/her peers and use a language fluidly in general conversation. Typically, social conversations are centered on an immediate context, require a lower cognitive demand, and the language is not specialized allowing students to develop BICS within six-months to two-years of immersion in a new language (Ohio University, n.d.; Ortiz, 1997). CALP, on the other hand, is the student's ability to use verbal and written language to learn complex material and abstract concepts, which typically takes between five to seven-years for a student to develop (Ohio University, n.d.). Therefore, teachers may observe a student in general conversation and perceive their language skills to be "proficient" when, in fact, they are not at a level to use their second language for academic learning (Shifrer et al., 2011).

A third reason that correctly categorizing an ELL student as SLD is challenging is because there are no clear definitions or criteria used to identify students with SLD, and this is amplified when a student is an ELL (See Appendix A for Minnesota diagnostic criteria; Pérez et al., 2008). In the 1997 reauthorization of IDEA, it was mandated that the diagnosis of SLD could not be associated with "cultural factors, environmental or economic disadvantage, or being of limited English proficiency" (Shifrer et al., 2011, p. 247), though no information was provided regarding educational practices after an ELL student was identified with a disability (Romero,

2014). Thus, the correlation of limited English proficiency and low academic achievement continues to put some ELL students at risk for overrepresentation in this category. However, as the present study highlights with the underrepresentation of Somali and “Other”-speaking students in SLD, examination of proportionality based on specific language groups, rather than “ELL versus non-ELL”, is important because differences in prevalence rates may be noted based on language. This information is valuable for education professionals and policy makers to discern which specific language groups need further investigation regarding special education identification and assessment processes.

Currently, students are often identified with SLD through a process known as Response to Intervention (RTI). RTI includes a three-tier system that includes supports within a classroom setting before a student is referred for special education (Romero, 2014). In Tier I, all students are monitored for learning progress. Students noted to have difficulty with learning may advance to Tier II, which involves small group sessions that supplement the core curriculum. If difficulties continue to persist, a school psychologist may become involved along with the child’s family to determine if there is an underlying disorder that impacts the child’s learning abilities (Romero, 2014). Before a child is diagnosed with SLD, other causes of learning difficulty (e.g., emotional disorders, intellectual disabilities, developmental delay, brain diseases, etc.) must be ruled out with medical examinations and speech/language assessments (Eunice Kennedy Shriver National Institute of Child Health and Human Development, 2014).

Through RTI, a team approach is crucial to assisting students in need of extra support in the classroom. Ideally, the team should consist of professionals with varying views, backgrounds, and perceptions so different opinions regarding the child’s status may be evaluated, and thus reduce bias in referrals to special education (Romero, 2014). Bos and Reyes (1996; as

cited in Romero, 2014), reported four interactive teaching strategies a team may use in Tier I or II to support CLD students. These strategies include: a) use of a natural approach to language acquisition involving play and discovery, b) incorporation of sociocultural experiences, c) practice English skills with peers of varying skill levels, and d) use of direct instruction and practice to generalize skills.

Another interesting trend noted in this study and previous research (Romero, 2014) was that ELL students had greater prevalence rates in the category of SLD in comparison to SLI, a special education category for difficulties with language. It is possible that ELL students are referred for SLD because they struggle with learning specific topics that require understanding of complex, abstract concepts (e.g., math, science) as a result of a language barrier (i.e., acquisition of CALP), or that ELL students may have difficulty mastering reading/writing in English. More research is needed to determine what factors influence the prevalence rate of ELL students in the SLD category, if SLD services are beneficial/necessary for learning, and if there is a differential performance when ELL students are categorized as SLD versus SLI.

Overall, more research is needed in the category of SLD to determine trends on a larger scale (i.e., at the national level), on a smaller scale (i.e., at the district level), and to determine patterns in other states. Data analysis at the national level would provide an understanding of how the U.S. is doing as a whole in identifying ELL students for special education, and may set a benchmark for comparison to smaller scale analyses. District level analysis would help increase professionals' awareness of the proportionality of their students in special education, and perhaps provide administrators with valuable information to guide their policy decisions. All educators would become more aware and more accountable in the referral, assessment, and intervention process. Finally, state level analysis would be beneficial because it would allow for comparison

of proportionality between states. Because there are no federal laws mandating the use of specific assessments or intervention processes for ELL students, a comparison of state referral and assessment programs, in conjunction with the examination of the proportion of ELL students in special education, would be beneficial in identifying optimal referral and assessment protocols.

Autism Spectrum Disorder

ASD has gained the attention of medical and educational professionals as awareness of this disorder has increased among the general public, and as the national prevalence rate of ASD has increased from 1 in 150 children in 2000, to 1 in 68 in 2010 (Center for Disease Control and Prevention, 2015). Results of this study indicate that in the state of Minnesota, English-speaking students had the highest prevalence rates in ASD, followed by “Other”-, Somali-, Spanish-, and Hmong-speaking students. There were significant differences between all language groups in this category.

Research has dispelled the ideas that parents and vaccinations cause ASD (National Institute of Neurological Disorders and Stroke, 2015). The leading hypothesis for the etiology of this developmental disability includes genetic components that impact brain development, which in turn impact a child’s communication skills (National Institute of Neurological Disorders and Stroke, 2015). Autism is a spectrum disorder, meaning symptoms and severity vary across individuals, making it difficult to diagnosis. A child’s primary care doctor is often responsible for completing behavioral, psychological, genetic, and neurological assessments to make an ASD diagnosis, though ideally a team approach would be used that includes an SLP, occupational therapist, physician, and psychologist (ASHA, 2015a). Generally, a child’s home language does not impact their diagnosis of ASD because a professional is able to observe a child’s behaviors

(e.g., repetitive behaviors, increased sensory awareness, rigidity to routine) and communication overall (e.g., use of eye contact, topic initiations, and response to interactions) to make a diagnosis (Hewitt et al., 2013). However, language barriers are a concern when communicating effectively with parents to ensure they understand the diagnosis and intervention options available.

In Minnesota, the Somali population has stood out in the ASD special education category due to the perception that Somali students were being identified with ASD at a higher rate than other racial/ethnic groups. Due to civil war in Somalia, thousands of Somali refugees migrated to Minnesota in the 1990's and since that time their families have joined them making Minnesota home to the largest Somali population in the U.S. (Hewitt et al., 2013). Within this large Somali community, parents and professionals became concerned that Somali students were being identified with ASD at a greater rate than other racial/ethnic groups. This led to the development of the Minneapolis Somali Autism Spectrum Disorder Prevalence Project (Hewitt et al.).

The Minneapolis project involved calculation of prevalence rates of school aged children amongst different racial/ethnic groups (Somali, White, Black, Hispanic) in the state of Minnesota by reviewing records from schools and pediatric clinics, and then having clinicians skilled in ASD confirm the diagnosis. Results of the Minneapolis project were consistent with the present study: English (White) students had the highest prevalence rate (1 in 36) followed by Somali (1 in 32), Black (1 in 62), and Hispanic (1 in 80). The Minneapolis Project also examined the number of students in ASD who had a secondary diagnosis of intellectual disability and found that 100% of Somali students examined with ASD had an intellectual disability, compared to 20% of White students, 30% of Black students, and 22% of Hispanic students.

Similar to the present study, the Minneapolis Project was only able to speculate about why these differences occurred in Minneapolis ethnic/racial groups. One speculation from the Minneapolis project included the idea that Somali students present with more severe forms of ASD, which makes it easier, and perhaps more urgent, to identify them compared to children with milder forms of the disorder. Additional support for this hypothesis was presented in a study by Estrem and Zhang (2010) who found the mean age of entry into the ASD special education category was earlier for Somali-speakers (6.46 years) compare to English-speakers (10.53 years). More research is needed to determine if there is a difference in symptoms/severity across racial/ethnic/language populations that could account for disproportionality patterns observed.

Looking at Somali-speaking students prevalence rates in other categories, it was noted they were underrepresented in the SLD and SLI special education categories, and had high representation in the SMI special education category compared to other language groups in this study. One hypothesis for these findings is the role of culture in parenting and perspectives of developmental disabilities. In Somali culture, there is a taboo surrounding intellectual, developmental, or mental health disabilities. In fact, there are only two words to describe a person's mental health in Somali, "crazy" and "sane" (Hewitt et al., 2013). Therefore, for disabilities that are "invisible" or subtle and academically linked (e.g., SLD, SLI), Somali parents may not be aware of the academic difficulties their child is experiencing, believe in the remediation process, and/or pursue outside services. On the other hand, for health conditions that present with more severe and overt signs/symptoms, Somali parents may be more willing to seek help from outside resources. More information is needed in the potential causes of more severe disabilities, their possible relation to genetics, race, or immigration, and understanding the

Somali culture to shed light on the prevalence rate trends observed in the present and previous studies.

Deaf/Hard of Hearing

The special education category of D/HH has not been investigated in previous proportionality research, presumably because it is considered an objective, low incidence category (Artiles et al., 2010). D/HH was studied specifically in this project because it is pertinent to speech-language pathology. Results indicate Hmong- and “Other”-speaking students were significantly overrepresented in D/HH compared to English-, Spanish-, and Somali-speaking students. These results were consistent with a study done in 2002 at the University of Minnesota, which reported Hmong-speaking students made up 40% of the D/HH population in the St. Paul school district (Wathum-Ocama & Rose, 2002).

The American Speech-Language-Hearing Association (2015b) states genetic factors (heredity) account for 50% of all cases of hearing loss. With genetic mutations, a child may be born with a hearing loss, or lose their hearing as they mature. The majority of genetic hearing loss can be attributed to autosomal recessive (70% of cases) or autosomal dominant (15% of cases) patterns of inheritance, but in rare cases x-linked or mitochondrial inheritance patterns have also been observed (ASHA, 2015b). Researchers and health care professionals have identified genetic syndromes that typically include hearing loss, such as Down Syndrome, Usher Syndrome, Treacher Collins Syndrome, Crouzon Syndrome, Alpert Syndrome, and Waardenburg Syndrome (ASHA, 2015b). In addition to genetic factors, there are other, non-genetic factors that may cause congenital hearing loss, including maternal infections (rubella, cytomegalovirus), prematurity, low birth weight, birth injuries, toxins (e.g., drugs, alcohol)

consumed during pregnancy, maternal diabetes, toxemia during pregnancy, and/or lack of oxygen (anemia; ASHA, 2015b).

All 50 states have established an Early Hearing Detection and Intervention program, and 43 states plus the District of Columbia and Puerto Rico have formed state laws that mandate newborns be screened for hearing loss (National Institute of Health, 2010). However, rules and regulations in other countries vary on hearing screenings, and when people immigrate to the U.S. the mandatory medical evaluation performed prior to entering the country does not include a hearing evaluation. Therefore, immigrant children may not have their hearing assessed until it is performed in the school setting in the U.S. (Pape, Kennedy, Kaf, & Zahirsha, 2014).

Researchers have reported that families leave their home country for the United States because they suspect or have confirmed that their child has a hearing loss and they believe the opportunities, resources, and services for their child with a hearing loss will be greater in the U.S., and their child will face less discrimination (Steinberg, Bain, Li, Delgado, & Ruperto, 2003). In other countries, and even in certain areas of the United States, hearing loss identification may be challenging due to a lack of hearing professionals, lack of organized national newborn hearing screening databases, and limited medical care in rural areas, resulting in challenges with evaluating children and providing follow-up care for hearing intervention (Pape et al., 2014). For example, in Mexico children are typically identified with hearing loss at the age of 42- months, an age when their language skills should be rapidly developing (Pape et al., 2014). As mentioned previously, late identification of hearing loss potentially results in children with delayed speech, language and cognitive skills, which may have long lasting consequences. For minority children with hearing loss in the U.S., research has indicated that

achievement levels of D/HH children are significantly lower compared to the majority population (Wathum-Ocama & Rose, 2002).

Because the diagnosis of a hearing loss requires objective measures (see Appendix A for Minnesota diagnostic criteria), more research is needed to determine proportionality of hearing loss across race/ethnic groups, and determine why disproportionality exists. Research in this area may include examination of genetic factors, environmental factors, and craniofacial development. Of particular interest is the high prevalence rate of Hmong- and “Other”-speaking students in D/HH compared to the other language groups. Due to the mixed nature of the “Other” language category, it is difficult to speculate on the reason for their overrepresentation. However, for the Hmong-speaking group there are two hypotheses that future research may investigate.

The first hypothesis to investigate is the prevalence of home births versus hospital births in the Hmong community. Olusanya and Somefun (2009) investigated the relationship of sensorineural hearing loss (SNHL) and birth location in infants from Lagos, Nigeria. Their results indicate a significant difference in the prevalence of SNHL based on birth location, with prevalence rates of SNHL ranging from to 4.0 per 1000 for infants born in government based hospitals, to 23 per 1000 for infants born in family homes. The authors also noted that mothers who gave birth outside of the hospital setting preferred to use herbal medication in pregnancy, deliver vaginally, and did not have skilled attendants present at delivery. Therefore, there are multiple factors present in Olusanya’s and Somefun’s study that could account for the increased prevalence of SNHL in births outside the hospital. More research is needed in this area, and it may be worth investigating birthing beliefs and trends in the Hmong-speaking populations to determine if similar patterns exist that may account for the high prevalence rates in D/HH reported in the present study.

A second hypothesis to investigate is the access Hmong families have to medical services. Huang, Yu, and Ledsky (2006) analyzed the 1999 National Survey of America's Families (NSAF) Child Public Use File (N = 35,938) to determine the relationship of citizenship status, health status, and demographic characteristics to health care access. Results of their study indicate that "parental citizenship status plays a strong role in children's health care access" (Huang, Yu, & Ledsky, 2006, p. 637). In fact, foreign-born, noncitizen children were four times more likely to lack health care insurance coverage, 40% less likely to have visited a doctor in the previous year, and twice as likely to lack a usual source of care when compared to native-born children (Huang et al., 2006). Even children who were born in the U.S. but who have immigrant parents were found to have declining rates of health insurance coverage (Huang et al., 2006). In the case of hearing, continued medical care is important because hearing loss may be caused by treatable conditions (e.g., gradual buildup of cerumen, otitis media; Mayo Clinic Staff, 2015). If families do not have access to a usual source of care, a child may then be at increased risk for hearing loss, which may explain the increased prevalence of Hmong and "Other" language populations. More research is needed to determine the validity of this hypothesis.

Resolution of Disproportionality

The issue of disproportionality is complex. Yet, several authors have described how to resolve the issue in the special education system. First, it is crucial that education professionals understand what disproportionality is and why it is a problem. In order to do this, research studies such as this need to be completed to identify the problem and raise awareness. In addition, proportionality studies should serve as a baseline measure to compare progress over time (Skiba et al., 2008). Second, education professionals and policy makers must be open to discussing proportionality research results, and hold in-depth, open conversations regarding the

impact a student's race, ethnicity, gender, socioeconomic status, culture, and language have on the potential or risk for special education identification (Skiba et al., 2008). Third, it is important for education professionals to diversify the curriculum to cater to all their students. This may include incorporation of content and instructional materials that take into account the experiences and history of students from diverse culture and language backgrounds. By incorporating materials that pertain to a student's cultural/linguistic background, the student will find greater meaning in the lesson, and be able to form a connection between what they are learning in school and what they are learning in their home. This may help to alleviate some difficulties students of culturally and linguistically diverse backgrounds face in the academic setting. Teachers can also create an academic environment that fosters the feeling of empowerment, reflection, and analysis in their students (Salend & Garrick Duhaney, 2005).

A fourth component in the resolution of disproportionality within special education is the inclusion of the family and community in the academic setting. Research has indicated that the participation of families in school-based activities has a positive impact on a child's academic and social performance (Salend & Garrick Duhaney, 2005; Skiba et al., 2008; Wathum-Ocama & Rose, 2002). A meta-analysis conducted by Guiberson (2009) indicated the majority of Hispanic parents were satisfied with special education services. However, 17% of parents surveyed reported they were mostly or entirely unsatisfied with special education. According to survey results, Hispanic parents reported being confused with the special education assessment and classification process, receiving limited contact from the school, believing school professionals demonstrated minimal effort for intervention, and perceiving school professionals as having negative attitudes toward their child and themselves. A qualitative study with Hmong parents of a child with hearing loss indicated parents did not know their legal rights in terms of special

education services, parents were frustrated by the need of a translator to communicate with school personnel, and parents had limited participation in academic events (Wathum-Ocama & Rose, 2002). Results such as these indicate that efforts need to be taken to educate families about the special education process, their role on the special education team, and the legal rights they have to special education services.

In terms of special education identification, training of more CLD education professionals should be promoted to allow increased diversity in multidisciplinary education teams. In addition, all members should receive ongoing education on cultural and linguistic differences they may see within the student body. A high-quality pre-referral process should also be developed in the school setting. Within the pre-referral process, the education professional should take into account the student's strengths and needs, his/her educational and social issues, medical history, the student's experiential, cultural, and linguistic background, and the family's and teacher's perspective of the student's performance (Salend & Garrick Duhaney, 2005). Documentation of the student's performance in multiple classroom-based educational interventions should be completed prior to a referral to special education (Skiba et al., 2008).

If educational intervention strategies within the classroom do not meet the student's needs, a referral to special education may be warranted and further assessment would be needed to determine if the student has a biological-cognitive condition that impacts his/her learning abilities. However, as mentioned above, standardized assessments do not meet the needs of the majority of bilingual students. Alternatives to standardized assessments cited in research include: performance and portfolio assessment, curriculum-based measurements, rubrics, dynamic assessments, learning logs and student journals, think-alouds, and self-evaluation techniques (Salend & Garrick Duhaney, 2005). In addition, assessment procedures should focus on context

to provide the education professional a better understanding of a student's academic or behavioral difficulty (Skiba et al., 2008).

Following the classification of a student in a special education category, the education professional needs to continue taking into account the cultural and linguistic background of the student to ensure special education services provide optimal benefits to the student. There is limited research regarding the effectiveness of special education intervention for ELL students, signifying that more information is needed to determine approaches that best meet the needs of CLD students.

Limitations

This study included a state-level analysis of enrollment in special education based on home language. Previous research including state and district level analysis has indicated that a small proportion of districts that have special education identification practices that result in increased risk for disproportionate representation of subgroups can strongly affect statewide rates of identification (Sullivan, 2011). Therefore, it is inappropriate to assume that because disproportionality is indicated at the statewide level that all school districts are practicing inappropriate identification measures. On the other hand, disproportionality that is not indicated at the state level may still be a concern within a district (Skiba et al., 2008). Further research is needed to determine which Minnesota districts in particular have challenges with disproportionality, which language groups are affected, and which special education categories have disproportionate representation so remediation procedures can be implemented appropriately.

A second limitation to this study includes the generalizability of the results to other states or the national level. Though federal laws mandate programs for ELL students and their rights to

special education services as needed, there are no federal regulations outlining general ELL identification or language acquisition programs, nor the assessments and intervention techniques used for identifying and supporting ELL students with disabilities. As a result, states and districts are responsible for developing programs appropriate for their student populations. Therefore, research studies conducted in different states may report trends that vary from what was observed in the present study. It is important to identify these differences and discern what is different between states to support optimal education, identification, assessment, and treatment of ELL students.

Finally, this study did not delve into *why* there was a disproportionate representation of students based on home language in Minnesota special education programs, or how ELL students perform in special education programs. Ideally, the special education identification process would not have professional bias, mislabeling of students, or students who “fall through the cracks” and do not get needed services. Additional factors, such as students’ demographic information, family involvement, language acquisition services, professional’s education, and assessment procedures should be examined at the local level to determine the reason behind disproportionality. In addition, there is a perception that special education services are more important than language acquisition services for ELL students, often resulting in ELL students receiving only special education services and no extra language support (Romero, 2014). However, this study and other similar studies have not explored how a bilingual child responds to special education services compared to language acquisition programs.

Chapter V: Conclusion

Results of this study indicate that in the state of Minnesota, there is both under- and overrepresentation of students in special education based on home language. The four special education categories examined more thoroughly (SLD, SLI, ASD, and D/HH) indicate that different language groups are at risk for over- and underrepresentation, and this varies with special education category. Prevalence rates and RRs over time for each language group were fairly consistent from 2006-07 to 2012-13. Further research is needed to determine what Minnesota districts in particular are experiencing challenges in disproportionality based on home language, and if the trends are similar to what is observed in other states and at the national level. In addition, more information is needed to determine *why* disproportionality exists (e.g., educational professional bias, poor assessment materials, genetic factors, immigration status) so policies can be put in place to educate professionals about, and enforce appropriate identification of students for special education services. It is crucial that information regarding disproportionality be discussed amongst education professionals and policy makers to increase understanding of the problem, and promote collaboration in devising plans to resolve the problem one district at a time.

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Appendix A
MDE (2012) Criteria for Special Education Enrollment

Special Education Category	Inclusion Criteria
Autism Spectrum Disorders	<p>“Based on the information in the Evaluation Report and the student file, the student must meet requirements in A and B to be eligible for this disability category. The determination must be made by a multidisciplinary team, which includes at least one professional with experience and expertise in the area of ASD due to the complexity of this disability and the specialized intervention methods. The team must also include a school professional knowledgeable of the range of possible special education eligibility criteria. The behavior indicators demonstrated must be atypical for the pupil’s developmental level. The team shall document behavioral indicators through at least two of these methods: structured interviews with parents, autism checklists, communication rating scales, developmental rating scales, functional behavior assessments, application of diagnostic criteria from the current Diagnostic and Statistical Manual (DSM), informal and standardized evaluation instruments, or intellectual testing.</p> <p>A. The team must document that the pupil demonstrates patterns of behavior described in at least two of the three sub-items, one of which must be sub-item (1).</p> <p>1. Qualitative impairment of social interaction, as documented by two or more behavioral indicators, for example:</p> <ul style="list-style-type: none"> _____ limited joint attention and limited use of facial expressions towards others _____ does not show or bring things to others to indicate interest in the activity _____ demonstrates difficulty relating to people, objects, and events _____ _____ gross impairment in ability to make and keep friends _____ significant vulnerability and safety issues due to social naiveté _____ may appear to prefer isolated or solitary activities _____ misinterprets others' behaviors and social cues _____ other _____ <p>For complete information regarding disability criteria requirements, refer to Minnesota Rule 3525.1325</p> <p>AND</p> <p>2. Qualitative impairment in communication, as documented by one or more behavioral indicators, for example:</p> <ul style="list-style-type: none"> _____ not using finger to point or request _____ using other's hand or body as a tool _____ showing lack of spontaneous imitations or lack of varied imaginative play _____ absence or delay of spoken language

	<p> <input type="checkbox"/> limited understanding and use of nonverbal communication skills such as gestures, facial expressions, or voice tone <input type="checkbox"/> odd production of speech, including intonation, volume, rhythm, or rate <input type="checkbox"/> repetitive or idiosyncratic language <input type="checkbox"/> inability to initiate or maintain conversation when speech is present <input type="checkbox"/> other _____ OR </p> <p>3. Restricted, repetitive, or stereotyped patterns of behavior, interests, and activities as documented by one or more behavioral indicators, for example:</p> <ul style="list-style-type: none"> <input type="checkbox"/> insistence on following routines or rituals <input type="checkbox"/> demonstrating distress or resistance to change in activity <input type="checkbox"/> repetitive hand or finger mannerism <input type="checkbox"/> lack of true imaginative play versus reenactment <input type="checkbox"/> overreaction or under-reaction to sensory stimuli <input type="checkbox"/> rigid or rule-bound thinking <input type="checkbox"/> intense, focused preoccupation with a limited range of play, interests, or conversation topics <input type="checkbox"/> other _____ <p>B. Verification</p> <p>The evaluation report must include documentation with supporting data in all four areas below that verifies ASD adversely affects the pupil's performance and that the pupil is in need of special education instruction and related services.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Present levels of performance in each core feature identified in A (subitem 1 and either subitem 2 or 3). <input type="checkbox"/> Education needs in each core feature identified in A (subitem 1 and either subitem 2 or 3). <input type="checkbox"/> Observations of the pupil in two different settings, on two different days. <input type="checkbox"/> Summary of the pupil's developmental history and behavior patterns. <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012)
Blind-Visually Impaired	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements in A and B below.</p> <p>A. Visual Impairment</p> <p>The student's file must include documentation of visual impairment by a licensed eye specialist in at least ONE of the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Visual acuity of 20/60 or less in better eye with best conventional correction. Estimation of acuity for difficult-to-test pupils for pre-kindergarten, measured acuity must be significantly deviant

	<p>from what is developmentally age appropriate <input type="checkbox"/> Visual field of 20 degrees or less, or bilateral scotomas. <input type="checkbox"/> Congenital or degenerative condition: _____</p> <p>• e.g., progressive cataract, glaucoma, retinitis pigmentosa</p> <p>B. Functional Evaluation The student's file must include a functional evaluation of visual abilities. A licensed teacher of the visually impaired must determine the student has or experiences at least ONE of the following: <input type="checkbox"/> Limited ability in visually accessing program-appropriate educational media without modification. <input type="checkbox"/> Limited ability to visually access full range of program-appropriate media and materials without accommodating actions such as changes in posture, body movement, squinting, focal distance, etc. <input type="checkbox"/> Variable visual ability due to environmental factors that cannot be controlled such as contrast, weather, color, or movement. <input type="checkbox"/> Reduced or variable visual acuity due to visual fatigue or factors common to the eye condition.</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p><input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012)</p>
Deaf-Blind	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements below. Deaf and Blind: Documentation verifies meeting criteria for both disability areas below: <input type="checkbox"/> Visual Impairment See Minnesota Rule 3525.1345 for criteria. <input type="checkbox"/> Deaf and Hard of Hearing See Minnesota Rule 3525.1331 for criteria.</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p><input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012)</p>
Deaf/Hard of Hearing	<p>“Based on information in the Evaluation Report and in the student file, the student must meet the requirements in A and either B, C, or D below. A. Measurements</p>

Audiological documentation from a certified audiologist must be provided to demonstrate that the pupil has ONE of the following:

- _____ Sensorineural hearing loss with an unaided pure tone average, speech threshold, or auditory brainstem response threshold of 20 decibels hearing level (HL) or greater in the better ear;
- _____ Conductive hearing loss with an unaided pure tone average or speech threshold of 20 decibels hearing level (HL) or greater in the better ear persisting over 3 months or occurring at least 3 times in the previous 12 months as verified by audiograms with at least one measure provided by a certified audiologist;
- _____ Unilateral sensorineural or persistent conductive loss with an unaided pure tone average or speech threshold of 45 decibels hearing level (HL) or greater in the affected ear; or
- _____ Sensorineural hearing loss with unaided pure tone thresholds at 35 decibels hearing level (HL) or greater at 2 or more adjacent frequencies (500 hertz, 1000 hertz, 2000 hertz or 4000 hertz) in the better ear.

B. Effect on Educational Performance

The student's hearing loss affects educational performance as demonstrated by:

- _____ The student needs to consistently use amplification appropriately in educational settings as determined by audiological measures and systematic observation data; OR
- _____ The student has an achievement deficit showing performance in the 15th percentile or 1.0 standard deviation or more below the mean in one area. Achievement Test

For complete information regarding disability criteria requirements, refer to Minnesota Rule 3525.1331

Basic reading skills Reading comprehension Written language General knowledge

C. Use or Understanding of Spoken English

Basic Reading Skills Results _____

Reading Comprehension Results _____

Written Language Results _____

General Knowledge Results _____

The student's hearing loss affecting the use or understanding of spoken English as documented by one or both of the following:

- _____ Under typical classroom conditions, the student's classroom interaction is limited as measured by systematic observation of communication behaviors; OR
- _____ The use of American Sign Language or one or more alternative or augmentative systems of communication, alone or in combination with oral language as documented by parent or teacher reports and language sampling conducted by a professional with knowledge in the area of communication with persons who are deaf or hard of hearing.

D. Effect on Adaptive Behavior

	<p>_____ The student's hearing loss affects the adaptive behavior required for age-appropriate social functioning as supported by documented systematic observation within the student's primary learning environments by a licensed professional and the student, when appropriate; AND</p> <p>_____ Below average scores of same-aged peers on a standardized scale of social skill development.</p> <p>Test Name _____</p> <p>Results _____ Review of Eligibility Determination</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision.</p> <p>_____ The documentation does not support the team decision.” (MDE, 2012)</p>															
<p>Developmental Cognitive Delay – Mild & Developmental Cognitive Delay - Severe</p>	<p>Based on information in the Evaluation Report and the student file, the student must meet the requirements in A and B below.</p> <p>A. Adaptive Behavior</p> <p>_____ The student demonstrates below-average adaptive behavior in school by a composite score at or below the 15th percentile on a nationally normed, technically adequate measure of adaptive behavior.</p> <p>Adaptive behavior test name _____</p> <p>Composite score percentile _____</p> <p>The student demonstrates below average adaptive behavior at home by a composite score at or below the 15th percentile on a nationally normed, technically adequate measure of adaptive behavior. Adaptive behavior test name: _____ Composite score percentile _____</p> <p>AND Documentation of needs and the level of support required in at least four of the seven adaptive behavior domains across multiple environments.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 20%;">Domain</th> <th style="width: 15%;">Home</th> <th style="width: 15%;">School</th> <th style="width: 15%;">Community</th> <th style="width: 35%;">Needs and Level of Support Required</th> </tr> </thead> <tbody> <tr> <td>Daily Living and Independent Living Skills</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Social and Interpersonal Skills</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Domain	Home	School	Community	Needs and Level of Support Required	Daily Living and Independent Living Skills					Social and Interpersonal Skills				
Domain	Home	School	Community	Needs and Level of Support Required												
Daily Living and Independent Living Skills																
Social and Interpersonal Skills																

Communication Skills				
Academic Skills				
Recreation and Leisure Skills				
Community Participation Skills				
Work and Work-Related Skills				

AND

Is supported by BOTH of the following:

A systemic observation

Parent input

Other sources of documentation may include checklists, classroom or work samples, interviews, criterion-referenced measures, educational history, medical history, or pupil self-report.

B. General Intellectual Functioning

The student demonstrates significantly below-average general intellectual functioning as measured by an individually administered, nationally normed test of intellectual ability.

Intellectual Ability Test: _____ Full Scale Score: _____

SD: _____

Mild-moderate range = 2 standard deviations below the mean (+ or – 1 standard error of measurement)

Severe-profound range = 3 standard deviations below the mean (+ or – 1 standard error of measurement)

AND The student's significantly below-average general intellectual functioning is verified through:

A written summary of results from at least two systematic observations with consideration for culturally relevant information, medical and education history and at least one of the following:

Supplemental tests of specific abilities

Alternative methods of intellectual assessment

Criterion-referenced tests

Clinical interviews with family members

Observation and analysis of behavior across multiple environments

Note: DCD does not include conditions primarily due to a sensory or physical impairment, traumatic brain injury, autism spectrum disorder, severe multiple impairments, cultural influences, or inconsistent educational programming.

Review of Eligibility Determination

	<p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision. _____ The documentation does not support the team decision.” (MDE, 2012)</p>
<p>Developmental Delay – Ages 3-6</p>	<p>“Based on information in the Evaluation Report and the student file, a child identified as eligible under Developmental Delay criteria must meet the requirements in 1 and 2 below. 1. Developmental Delay</p> <p>The child must meet one of the following to be determined eligible for Early Childhood Special Education services under Developmental Delay:</p> <p>_____ A diagnosed physical or mental condition or disorder that has a high probability of resulting in developmental delay. OR</p> <p>_____ A delay of 1.5 standard deviations or more below the mean in two or more developmental areas:</p> <p>_____ Cognitive Development Standard Deviation _____</p> <p>_____ Physical Development (including vision and hearing) Standard Deviation _____</p> <p>_____ Communication Development Standard Deviation _____</p> <p>_____ Social or Emotional Development Standard Deviation _____</p> <p>_____ Adaptive Development Standard Deviation _____</p> <p>2. Need for Special Education</p> <p>The child’s need for special education is supported by ALL of the following:</p> <p>_____ At least one documented systematic observation in the child’s daily routine setting by an appropriate professional or, if observation in the daily routine setting is not possible, the alternative setting must be justified.</p> <p>_____ Developmental history</p> <p>For complete information regarding disability criteria requirements, refer to Minnesota Rule 3525.1351.</p> <p>Developmental Delay (Three through Six Years of Age)</p> <p>_____ At least one other evaluation procedure in each area of identified delay that is conducted on a different day than the medical or norm-referenced evaluation; which may include criterion- referenced instruments, language samples, or curriculum-based measures.</p> <p>Area of identified delay: _____ Evaluation procedure: _____</p> <p>Area of identified delay: _____ Evaluation procedure: _____</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision.</p>

	<p>_____ The documentation does not support the team decision.” (MDE, 2012)</p>
<p>Emotional/ Behavioral Disorder</p>	<p>“Based on information in the Evaluation Report and in the student file, K-12 students must meet the criteria in A through D below. Pre-kindergarten students must meet the requirements outlined in A, B, E and F. A pupil must demonstrate an established pattern of emotional or behavioral responses that represents a significant difference from peers.</p> <p>A. Significantly Different Behaviors</p> <p>_____ The student must exhibit withdrawn or anxious behaviors, pervasive unhappiness, depression, severe problems with mood or feelings of self-worth as defined by behaviors, such as:</p> <ul style="list-style-type: none"> _____ isolating self from peers _____ overly perfectionistic _____ displaying intense fears or school refusal _____ failing to express emotion _____ displaying pervasive sad disposition _____ changes in eating or sleeping patterns _____ developing physical symptoms related to worry or stress _____ other _____ <p>OR</p> <p>_____ The student must exhibit disordered thought processes manifested by unusual behavior patterns, atypical communication styles or distorted interpersonal relationships, such as:</p> <ul style="list-style-type: none"> _____ reality distortion beyond normal developmental fantasy and play or talk _____ inappropriate laughter, crying, sounds, or language _____ self-mutilation _____ developmentally inappropriate sexual acting out or developmentally inappropriate self- stimulation _____ rigid, ritualistic patterning _____ perseveration or obsession with specific objects _____ overly affectionate behavior towards unfamiliar persons _____ hallucinating or delusions of grandeur _____ other _____ <p>OR</p> <p>_____ The student must exhibit aggressive, hyperactive, or impulsive behaviors that are developmentally inappropriate, such as:</p> <ul style="list-style-type: none"> _____ physically or verbally abusive behaviors _____ impulsive or violent, destructive, or intimidating behavior _____ behaviors that are threatening to others or excessively antagonistic _____ other _____ <p>B. Adverse Effects on Educational Performance</p> <p>The student’s pattern of emotional or behavioral responses must adversely affect education performance and result in at least ONE of the following:</p>

Inability to demonstrate satisfactory social competence that is significantly different from appropriate age, cultural or ethnic norms;

OR

A pattern of unsatisfactory educational progress that is not primarily a result of intellectual, sensory, physical health, cultural or linguistic factors; illegal chemical use; autism spectrum disorders; or inconsistent educational programming.

C. Areas of Impact K-12

Documentation of prior interventions and the evaluation data for K-12 students must establish significant impairments in at least ONE of the following areas:

- intrapersonal
- academic
- vocational
- social skills

The impaired area identified above must meet ALL of the following criteria:

- Severely interferes with the pupil's or other students' educational performance
- Is consistently exhibited by occurrences in at least three different settings: two educational settings, one of which is the classroom, and a setting in either home, child care, or community
- Has been occurring throughout a minimum of six months, or results from the well-documented, sudden onset of a serious mental health disorder diagnosed by a licensed mental health professional

D. Evaluation Requirements K-12

The evaluation may include data from vocational skills measures; personality measures; self-report scales; adaptive behavior rating scales; communication measures; diagnostic assessment and mental health evaluation reviews; environmental, socio-cultural and ethnic information reviews; gross and fine motor and sensory motor measures; or chemical health assessments.

K-12 evaluation must be supported by current or existing data from ALL of the following:

- clinically significant scores on standardized, nationally normed behavior rating scales
- individually administered, standardized, nationally normed tests of intellectual ability and academic achievement
- record review
- mental health screening
- interviews with parent, pupil and teacher
- three systematic observations in the classroom or other learning environments
- health history review procedures
- functional behavioral assessment

FOR PRE-KINDERGARTEN STUDENTS: The student must meet criteria in areas A and B above. Additionally, the student must meet requirements for E and F.

	<p>E. Areas of Impact Pre-K Evaluation data must establish and define developmentally significant impairments in at least ONE of the following areas for pre-kindergarten students:</p> <p> <input type="checkbox"/> self-care <input type="checkbox"/> social relations <input type="checkbox"/> social or emotional growth </p> <p>The area(s) identified above must meet ALL of the following criteria:</p> <p> <input type="checkbox"/> data must document that emotional or behavioral responses are exhibited in at least one setting including either in the home, at childcare, or in the community <input type="checkbox"/> has been occurring throughout a minimum of six months, or results from the well-documented, sudden onset of a serious mental health disorder diagnosed by a licensed mental health professional </p> <p>F. Evaluation of Pre-K Pre-K evaluations must be supported by current or existing data from each of the following areas:</p> <p> <input type="checkbox"/> two or more systematic observations, including one in the home <input type="checkbox"/> a case history, including medical, cultural and developmental information <input type="checkbox"/> information on the student’s cognitive ability, social skills and communication abilities <input type="checkbox"/> standardized and informal interviews, including parent, teacher, caregiver and childcare provider <input type="checkbox"/> standardized adaptive behavior scales </p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p> <input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012) </p>
Other Health Impairment	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements in A through C below.</p> <p>A. Health Condition</p> <p><input type="checkbox"/> Medical documentation written and signed by a licensed physician of a medically diagnosed chronic or acute health condition. For initial evaluations, documentation must be dated within the previous 12 months.</p> <p>Health Condition _____</p> <p>OR</p> <p><input type="checkbox"/> In the case of Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD), written and signed documentation of a medical diagnosis by a licensed physician. For initial evaluation, documents must be dated within the past 12 months. The documentation must show the</p>

student meets DSM-IV criteria in items A-E. The DSM-IV criteria documentation must be provided by a licensed physician, mental health or medical professional licensed to diagnose the condition.

A licensed physician, an advanced practice nurse, or a licensed psychologist is qualified to make a diagnosis and determination of attention deficit disorder or attention deficit hyperactivity disorder for purposes of identifying a child with a disability. Minn. Stat. 125A.02 Subd.1.

B. Adverse Effects

In comparison with peers, the health condition adversely affects the pupil's ability to complete educational tasks within routine timelines as documented in at least THREE of the following areas:

- excessive absenteeism linked to the health condition (e.g., hospitalizations, medical treatments, surgeries or illnesses)
- specialized health care procedures that are necessary during the school day
- medications that adversely affect learning and functioning in terms of comprehension, memory, attention or fatigue
- limited physical strength resulting in decreased capacity to perform school activities
- limited endurance resulting in decreased stamina and decreased ability to maintain performance
- heightened or diminished alertness resulting in impaired abilities (e.g., prioritizing environmental stimuli, maintaining focus, or sustaining effort or accuracy)
- impaired ability to manage and organize materials and complete classroom assignments within routine timelines
- impaired ability to follow directions or initiate and complete a task

C. Unsatisfactory Educational Progress

The student's health condition results in a pattern of unsatisfactory educational progress as determined by a comprehensive evaluation. Documentation must include EACH of the following:

- An individually administered, nationally normed standardized evaluation of the pupil's academic performance
- Documented, systematic interviews conducted by a licensed special education teacher with classroom teachers and the pupil's parent or guardian
- One or more documented, systematic observations in the classroom or other learning environment by a licensed special education teacher
- A review of the pupil's health history, including the verification of a medical diagnosis of a health condition
- Records review

Review of Eligibility Determination

	<p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision. _____ The documentation does not support the team decision.” (MDE, 2012)</p>
Physically Impaired	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements in 1 and 2 below.</p> <p>A. Documentation of Physical Impairment</p> <p>_____ There must be documentation of a medically diagnosed physical impairment</p> <p>Physical Impairment _____</p> <p>B. Evaluation</p> <p>At least ONE of the following must be documented in the evaluation report.</p> <p>Functional Skills</p> <p>_____ The student’s need for special education instruction and service is supported by a lack of functional level in organizational or independent work skills as verified by a minimum of two or more documented, systematic observations in daily routine settings, one of which is completed by a physical and health disabilities teacher.</p> <p>Motor Skills</p> <p>_____ The student’s need for special education instruction and service is supported by an inability to manage or complete motoric portions of classroom tasks within time constraints as verified by a minimum of two or more documented systematic observations in daily routine settings, one of which is completed by a physical and health disabilities teacher.</p> <p>Educational Performance</p> <p>_____ The student’s physical impairment interferes with educational performance as shown by an achievement deficit of 1.0 standard deviation or more below the mean on an individually administered, nationally normed standardized evaluation of the student’s academic achievement.</p> <p>Achievement Test _____ Standard Deviation _____</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision. _____ The documentation does not support the team decision.” (MDE, 2012)</p>
Specific Learning Disability	<p>“Information about each item must be sought from the parent and included as part of the evaluation data. The evaluation data must confirm that the disabling effects of the child’s disability occur in a variety of settings. The child must receive two interventions prior to evaluation unless the parent requests an evaluation or the team waives the requirement due to urgency. Based on information in the Evaluation Report and the student file, a pupil has a specific</p>

learning disability and is in need of special education and related services when the pupil meets the criteria in A, B, and C OR A, B, and D below.

A. Documentation of Inadequate Achievement

The child does not achieve adequately in one or more of the following areas in response to appropriate classroom instruction:

- Oral Expression
- Listening Comprehension
- Written Expression
- Basic Reading Skills
- Reading Comprehension
- Reading Fluency
- Mathematics Calculation
- Mathematical Problem Solving

AND

The child does not make adequate progress to meet age or state-approved grade-level standards in one or more of the areas listed above when using a process based on the child's response to scientific, research-based intervention;

OR

The child exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, state-approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability (SLD).

AND

Documentation to support this finding must be both representative of the pupil's curriculum and useful for developing instructional goals and objectives. Documentation includes evidence of low achievement from the following sources, when available:

- Cumulative record reviews
- Class work samples
- Anecdotal teacher records
- Statewide and district-wide assessments
- Formal, diagnostic, and informal tests
- Results from targeted support programs in general education
- Curriculum based evaluation results

B. Information Processing

The child has a disorder in one or more of the basic psychological processes, which includes an information processing condition that is manifested in a variety of setting by behaviors such as inadequate:

- Acquisition of information
- Organization
- Planning and sequencing
- Working memory, including verbal, visual, or spatial
- Visual and auditory processing

- _____ Speed of processing
 _____ Verbal and nonverbal expression
 _____ Transfer of information
 _____ Motor control for written tasks (pencil and paper assignments,
 drawing, and copying)
 _____ Other: _____

C. Severe Discrepancy

The child demonstrates a severe discrepancy between general intellectual ability and achievement in at least one of the identified areas of achievement. The demonstration of a severe discrepancy shall not be based solely on the use of standardized tests. The instruments used to assess the child's general intellectual ability and achievement must be individually administered and interpreted by an appropriately licensed person using standardized procedures. For initial placement, the severe discrepancy must be equal to or greater than 1.75 standard deviations below the mean on a distribution of regression scores for the general population at the student's chronological age.

General Intellectual Ability Assessment Measure:

Overall Composite Score: _____ Regression Score: _____

Achievement Measure:

Cluster Area *Composite Score* _____

Oral Expression *Composite Score* _____

Listening Comprehension *Composite Score* _____

Written Expression *Composite Score* _____

Basic Reading Skills *Composite Score* _____

Reading Fluency Skills *Composite Score* _____

Reading Comprehension *Composite Score* _____

Mathematical Calculation *Composite Score* _____

Mathematical Problem Solving *Composite Score* _____

D. Inadequate rate of progress in response to scientific research-based intervention (SRBI)

The child demonstrates an inadequate rate of progress in response to intensive SBRI and the following components are documented:

	<p> <input type="checkbox"/> Rate of progress is measured over at least 7 school weeks on a minimum of 12 data points; <input type="checkbox"/> Rate of improvement is minimal and continued intervention will not likely result in reaching age or state-approved grade-level standards; <input type="checkbox"/> Progress will likely not be maintained when instructional supports are removed; <input type="checkbox"/> Level of performance in repeated assessment of achievement falls below the child’s age or state- approved grade-level standards; and <input type="checkbox"/> Level of achievement is at or below the 5th percentile on one or more valid and reliable achievement tests using either state or national comparisons. Local comparison data that is valid and reliable may be used in addition to either state or national data, but if it differs from either state or national data, the group must provide a rationale to explain the difference. </p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p> <input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012) </p>
<p>Specific Language Impairment</p>	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements in any one of the four areas below.</p> <p>1. Fluency Disorder</p> <p>A student who meets all of the fluency disorder criteria below is eligible for speech or language special education services:</p> <p> <input type="checkbox"/> A. The pattern interferes with communication as determined by an educational speech language pathologist and either another adult or the pupil. <input type="checkbox"/> B. Dysfluent behaviors occur during at least five percent of the words spoken on two or more speech samples. Scores _____ <input type="checkbox"/> C. Fluency patterns are not attributed only to dialectical, cultural or ethnic difference, or to the influence of a foreign language. </p> <p>2. Voice Disorder</p> <p>A student with a voice disorder must meet all criteria below to be eligible for speech or language special education services.</p> <p> <input type="checkbox"/> A. The pattern interferes with communication as determined by an educational speech language pathologist and either another adult or the pupil. <input type="checkbox"/> B. Achievement of a moderate to severe vocal severity rating is demonstrated on a voice evaluation profile administered on two separate occasions, two weeks apart, at different times of the day. Voice Profile # 1 Results: <input type="checkbox"/> moderate <input type="checkbox"/> severe Date _____ Time _____ </p>

	<p>Voice Profile # 2 Results: ____ moderate ____ severe Date _____</p> <p>Time _____</p> <p>____ C. Voice patterns are not attributed only to dialectical, cultural, or ethnic differences, or to the influence of a foreign language.</p> <p>3. Articulation Disorder</p> <p>A student with an articulation disorder qualifies for speech or language special education services if the student meets both A and D and either B or C:</p> <p>____ A. The pattern interferes with communication as determined by an educational speech language pathologist and either another adult or the pupil.</p> <p>____ B. Test performance falls 2.0 standard deviations below the mean on a technically adequate, norm-referenced articulation test. Test _____ Score _____</p> <p>____ C. The pupil is nine years of age or older and a sound is consistently in error as documented by two three-minute conversational speech samples.</p> <p>____ D. Articulation patterns are not attributed only to dialectical, cultural, or ethnic differences, or to the influence of a foreign language.</p> <p>4. Language Disorder</p> <p>A student with a language disorder qualifies for speech or language special education the student meets <i>both</i> A, B, and E and <i>either</i> C or D.</p> <p>A. The pattern interferes with communication as determined by an educational speech language pathologist and either another adult or the child.</p> <p>B. Analysis of language sample or documented observation of communication interaction indicates that language behavior is below or different from expectations based on age, developmental level, or cognitive level.</p> <p>C. The pupil scores 2.0 standard deviations or more below the mean on two norm-referenced, technically adequate language tests. Test name _____ Standard Deviation _____ Test name _____ Standard Deviation _____</p> <p>D. If technically adequate, norm-referenced language tests are not available to provide evidence of a deficit of 2.0 standard deviations below the mean in the area of language, two documented measurement procedures indicate a substantial difference from expectations, based on age, developmental level, or cognitive level. Procedure #1 _____</p> <p>Results _____</p>
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	<p>Procedure #2</p> <hr/> <p>Results</p> <hr/> <p>_____ E. Language patterns are not attributed only to dialectical, cultural, or ethnic differences, or to the influence of a foreign language</p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p>_____ The documentation supports the team decision. _____ The documentation does not support the team decision.” (MDE, 2012)</p>
Traumatic Brain Injury	<p>“Based on information in the Evaluation Report and the student file, the student must meet the requirements in all FIVE areas below. The determination must be made by a multidisciplinary team and supported by information collected from multiple settings and sources.</p> <p>A. Medical Documentation</p> <p>_____ There is documentation by a physician of a medically verified traumatic brain injury.</p> <p>B. Functional Impairment</p> <p>The student’s file must include documentation of a functional impairment attributed to the TBI that adversely affects education performance in at least one of the following:</p> <p>_____ intellectual-cognitive _____ sensory _____ academic _____ social-emotional-behavioral _____ motor _____ functional skills-adaptive behavior _____ communication</p> <p>C. Previously Existing Conditions</p> <p>Verification that the student’s impairments are not primarily the result of previously existing conditions. Indicate that none of the following contribute to a previously existing condition.</p> <p>_____ visual, hearing, motor impairments _____ developmental disabilities _____ environmental or economic disadvantage _____ emotional/behavioral disorders _____ language or specific learning disabilities _____ cultural differences</p> <p>D. Documentation</p> <p>The student file must include documentation of functional impairment through at least one of the following:</p> <p>_____ checklists</p>

	<p> <input type="checkbox"/> classroom or work samples <input type="checkbox"/> documented, systematic behavioral observations <input type="checkbox"/> educational/medical history <input type="checkbox"/> interviews with parent, student, and other knowledgeable individuals </p> <p>E. Documentation</p> <p>The student's file must include documentation of functional impairment based on at least one of the following:</p> <p> <input type="checkbox"/> criterion-referenced measures <input type="checkbox"/> personality or projective measures <input type="checkbox"/> sociometric measures <input type="checkbox"/> standardized assessment measures (academic, cognitive, communication, neuropsychological, or motor) </p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p> <input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012) </p>
Severely Multiply Impaired	<p>“Based on information in the Evaluation Report and the student file, the student must meet ALL requirements below.</p> <p>Multiple Disabilities</p> <p>Identify at least TWO disabilities that are documented in the student’s file.</p> <p> <input type="checkbox"/> Deaf or Hard of Hearing <input type="checkbox"/> Physically Impaired <input type="checkbox"/> Developmental Cognitive Disability – Severe-Profound range <input type="checkbox"/> Blind/Visually Impaired <input type="checkbox"/> Emotional or Behavioral Disorders <input type="checkbox"/> Autism Spectrum Disorders </p> <p>Review of Eligibility Determination</p> <p>To determine compliance with eligibility determination, one of the following MUST be checked.</p> <p> <input type="checkbox"/> The documentation supports the team decision. <input type="checkbox"/> The documentation does not support the team decision.” (MDE, 2012) </p>

Appendix B
Home Language Questionnaire ED-01336-08E

The following is to be completed by School District Personnel:

STUDENT IDENTIFICATION INFORMATION		
Student's Full Name		
Date Of Birth	Age	Grade Level
DISTRICT INFORMATION/VERIFICATION INFORMATION		
School name		District number
I hereby verify that the above information is true and accurate to the best of my knowledge and belief.		
<hr/> Name (Printed)		
<hr/> Signature – Responsible Authority	<hr/> Title	<hr/> Date


The following is to be completed by Parent/Guardian:

STUDENT LANGUAGE INFORMATION	
<i>Dear Parents and Guardians:</i>	
<i>In order to help your child learn, your child's teachers need to determine which language your child uses most. Please respond to the questions below by checking the appropriate box.</i>	
1. Which language did your child learn first?	<input type="checkbox"/> English <input type="checkbox"/> Other (specify): _____
2. Which language is most often spoken in your home?	<input type="checkbox"/> English <input type="checkbox"/> Other (specify) _____
3. Which language does your child usually speak?	<input type="checkbox"/> English <input type="checkbox"/> Other (specify): _____

PARENT/GUARDIAN INFORMATION	
I hereby verify that the above information is true and accurate to the best of my knowledge and belief.	
<hr/> Name (Printed)	
<hr/> Signature – Responsible Authority	<hr/> Date

Appendix C IRB Approval

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**OFFICE OF RESEARCH AND
SPONSORED PROGRAMS**
ST. CLOUD STATE UNIVERSITY.

Institutional Review Board (IRB)

Administrative Services 210
Website: stcloudstate.edu/osp Email: osp@stcloudstate.edu
Phone: 320-308-4932

Name: Hanna Zerfas

Address: 201 4th Ave. South Apt. A4
St. Cloud, MN 56301
Email: hmzerfas@stcloudstate.edu

Co-Investigators

Advisor: Theresa Estrem

Project Title: Hispanic Children with Hearing Loss: Prevalence and Parent Perspectives

Comments:
The Institutional Review Board has reviewed your application to conduct research involving human subjects. We are pleased to inform you that your project has been APPROVED in full accordance with federal regulations. Please note the following important information concerning IRB projects:


- The principal investigator assumes the responsibilities for the protection of human subjects in this project. Any adverse events must be reported to the IRB as soon as possible (ex. research related injuries, harmful outcomes, significant withdrawal of subject population, etc.).
- For expedited or full board review, the principal investigator must submit a Continuing Review/Final Report form in advance of the expiration date indicated on this letter to report conclusion of the research or request an extension.
- Exempt reviews only require the submission of a Continuing Review/Final Report form in advance of the expiration date indicated in this letter if an extension of time is needed.
- Approved consent forms display the official IRB stamp which documents approval and expiration dates. If a renewal is requested and approved, new consent forms will be officially stamped and reflect the new approval and expiration dates.
- The principal investigator must seek approval for any changes to the study (ex. research design, consent process, survey/interview instruments, funding source, etc.). The IRB reserves the right to review the research at any time.

Good luck on your research. If you require further assistance, please contact the Office of Research and Sponsored Programs at 320-308-4932 or email lldonnay@stcloudstate.edu. All correspondence should include your SCSU IRB number as indicated on this letter.

**IRB Application
Determination**

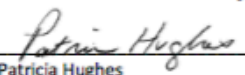
2/10/2015

For the Institutional Review Board:



Linda Donnay
IRB Administrator
Office of Research and Sponsored Programs

For St. Cloud State University:



Patricia Hughes
Interim Associate Provost for Research
Dean of Graduate Studies

SCSU/IRB#: 1408 - 1719	Approval Date: 2/10/2015	
Type of Review: Expedited	Expiration Date: 2/9/2016	