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The Impact of Socioeconomic Status, Race/Ethnicity, and English Learner Status in Predicting Student Placement with an Individual Education Plan During the Third Through Eighth Grades

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THE IMPACT OF SOCIOECONOMIC STATUS, RACE/ETHNICITY, AND ENGLISH LEARNER STATUS IN PREDICTING STUDENT PLACEMENT WITH AN INDIVIDUAL EDUCATION PLAN DURING THE THIRD THROUGH EIGHTH GRADES

by

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ABSTRACT

This study analyzed the predictive validity of certain demographic indicators and academic achievement assessments in determining designation of students with an Individual Education Plan (IEP). Specifically, the study examined the predictive validity of socioeconomic status, race/ethnicity, English Learner (EL) status, gender, the Smarter Balanced Summative Assessment (SBAC) in English/language arts and the SBAC in mathematics as predictors of student designation with an IEP. This study used secondary data from the 2017-2018 school year from a large, urban California school district. Binomial logistic regression was used to analyze the secondary data. The analysis found a statistically significant impact of low socioeconomic status, gender, the race/ethnicities of American Indian/Native Alaskan, black/African American, and white, the SBAC in English/language arts, and the SBAC in mathematics on student designation with an IEP. Determining key factors that can be used to predict students' designation with an IEP could assist school districts in providing supports to identified students previous to the students becoming deficient academically and potentially necessitating students' designation with an IEP. Additionally, the results of this study may provide additional insights into the process of determining a student eligible for designation with an IEP in a large, urban California school district.

Keywords: individual education plan, smarter balanced summative assessment, IEP designation

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Chapter 1

Rationale of the Study

Students with Individual Education Plans (IEPs) and receiving special education services tend to be less "successful" (lower graduation rates, lower higher education matriculation rates, lower lifetime economic earning potential) than students without IEPs (Chesmore, Ou, & Reynolds, 2016; Ehrhardt, Huntington, Molino, & Barbaresi, 2013; Feng & Sass, 2013). The course of study that students participate in during their K-12 educational experience, and especially during grades nine through twelve, has a significant impact on the future potential and direction of the students (Long, Conger, & Iatarola, 2012). This study will focus on students with IEPs during their third through eighth grade years. These grades are the focus of this study for two reasons. First, the California Smarter Balanced Summative Assessment is administered to students in the third through eighth grade years. Second, the third through eighth grade years are the precursors which set the path for the course of study in which students participate in their high school years.

In the United States as of 2015-16, approximately 13% of all students aged 3-21, about 6.7 million students, were identified as students with IEPs who were eligible to receive special education services (National Center for Education Statistics, 2018). According to California Department of Education data (December, 2018), approximately 775,000 students, or 12.7% of the student population, were students with IEPs who were eligible to receive special education services. The special education services offered to the students with IEPs are assumed to be beneficial for the students who have disabilities. The students with IEPs are given interventions and supports to help them be academically successful and reach their maximum potential. Sullivan (2011) indicates that ongoing overrepresentation of students with IEPs from

racial/ethnic minority groups is a powerful indicator of systemic issues of inequality, prejudice, and marginalization within the education system. Overrepresentation is a problem if it is associated with a lack of access for students to the most appropriate type of education, whether by placement in special education programs not needed by the students, or because of the lack of support for students who could benefit from the special education services (Strand, 2009).

The overrepresentation of minority race/ethnicity students is an issue that is one of the foremost issues in the field of special education. One of the main areas of Federal monitoring of special education services involves monitoring of the percentage of students receiving special education services disaggregated by race/ethnicity. One entire unit of the California Department of Education is tasked with the oversight of disproportionality or overrepresentation of special education placement by race/ethnicity. During the 2016-17 school year, 17.14% of California students with IEPs where identified as being disproportionally represented by race/ethnicity (California Department of Education, 2019). Yet, while race/ethnicity disproportionality is a topic that is well documented and confirmed, the factors that contribute to and propagate these inequities are still being investigated. A study by Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung (2005) concluded that the disproportionate placement of minority race/ethnicity students in special education classes is a highly complex issue. However, the significance of race/ethnicity disproportionality led the researchers to contend that the process of special education referral remains somewhat discriminatory. Reports of overrepresentation of certain racial/ethnic groups have contributed to special education being labeled as a modern form of institutional racism and a modern-day segregation of certain race/ethnic groups (American Psychological Association, Presidential Task Force on Educational Disparities, 2012; Artiles & Bal, 2008; Blanchett, 2007; Manning & Gaudelli, 2006).

Students designated with an IEP unnecessarily and receiving special education services when not needed can be a problem if it is associated with a lack of access for students to the most appropriate type of education (Donovan, & Cross, 2002; Strand, 2009). Enrollment in special education courses, while potentially beneficial for students with true learning disabilities, can be detrimental to students who are improperly placed in special education courses because of the limitation of the depth and breadth of curriculum (Kurth, & Keegan, 2014; Manning & Gaudelli, 2006). Students receiving special education instruction when they do not need the services creates a reduction of the time the student spends in general education courses with their peers receiving grade-level, standards-based instruction, and the overuse of the more costly, intense special education services, which wastes valuable educational resources which could be better used elsewhere (Hibel, Farkas, & Morgan, 2010; Morgan et al., 2018). Other concerns with the misplacement of students with an IEP include the harmful and negative stigma of being placed in special education courses and the level of the education being provided in special education classes (Arnold & Lassmann, 2003; Artilles & Bal, 2008; Courtade, Shipman, & Williams, 2017; Heller, Holtzman, & Messick, 1982; Hibel, Farkas, & Morgan, 2010). Given the negative impact of misplacement and over-placement of students with IEPs, it is imperative to continue and expand the research on the predictors which may project placement of students designated with IEPs. These predictors may give large urban districts, or similar districts, the opportunity to intervene with students at-risk of being designated with IEPs and potentially pre-empt the need for students to be designated with an IEP.

Purpose of Study

A number of studies indicate disproportional representation of students with IEPs based on race/ethnicity (Arnold & Lassmann, 2003; Artiles, Kozleski, & Trent, 2010; Othman, 2018;

Skiba, Kohler, Wu, Simmons, Ritter, & Henderson, 2006; Strand, 2009), poverty (Engle, & Black, 2008; Hibel, Farkas, & Morgan, 2010; Manning & Gaudelli, 2006; O'Connor & Fernandez, 2006; Skiba, Poloni-staudinger, Simmons, Feggins-azziz, & Chung, 2005), and English language status (Artiles & Rueda, 2005; Fernandez & Inserra, 2013; Morgan, Farkas, Cook, Strassfeld, Hillemeier, Pun, & Schussler, 2018; Samson & Lesaux, 2009). The purpose of this research was to explore the impact of socioeconomic status, race/ethnicity, and English learner (EL) status in predicting third through eighth grade students' designation with an IEP. In addition, the study examined whether those three variables had greater predictive validity of student designation with an IEP in the third through eighth grade years than the student information variables of gender, Smarter Balanced Summative Assessment score in English language arts, or Smarter Balanced Summative Assessment score in mathematics.

The study's sample came from a large, urban school district located in southern California. The school district was comprised of roughly 75,000 students of which 13% were white, 58% were Hispanic/Latino, 13% were African American, 7% were Asians, 3% were Filipino, 3% were Multiracial, and a small remaining percentage were classified as other race/ethnicities. Additionally, 69% of the students received free or reduced lunch, 12% received special education services, and 19% of the students were English Learners.

Although using predictors from earlier in students' academic career would give more time for intervention to potentially avoid some students from being designated with an IEP, looking at students earlier than the third grade would not allow the use of the Smarter Balanced Summative Assessment as an independent predictor. One of the issues in the designation of students with IEPs involved disabilities which involve a judgement made to determine if a student should be designated for assignment on an IEP (Artiles, 2010; Othman, 2018). If an

independent predictor of student designation with an IEP can be determined, these factors could reveal and eliminate the potential biases associated with the subjectivity of the judgement factor and allow for earlier intervention and potential prevention of some students' designation with an IEP.

Research Questions:

1) What is the impact of socioeconomic status, race/ethnicity, and EL status in predicting third through eighth grade student designation with an IEP?
2) What is the impact of socioeconomic status, race/ethnicity, EL status, and gender in predicting third through eighth grade student designation with an IEP?
3) What is the impact of the Smarter Balance Summative Assessment in English language arts, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP?
4) What is the impact of the Smarter Balance Summative Assessment in math, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP?

Significance of Study

Developing effective means of predicting students who are at high risk of being designated with an IEP has many practical applications. First and most importantly, if early intervention can prevent some students from being designated with an IEP, it will increase the students' chance of graduating from high school, increase the probability of the students moving on to higher education, and increase the lifetime earning potential over students who are placed on IEPs (Chesmore, Ou, & Reynolds, 2016; Ehrhardt, Huntington, Molino, & Barbaresi, 2013; Feng & Sass, 2013). Another benefit of intervening early to prevent students from being

designation with an IEP is a savings of the additional cost required to serve students with IEPs, which could then be used to serve students elsewhere (Morgan et al., 2018).

The current system of identifying students for placement on an IEP is not being successful in accurately placing students with an IEP. Too often, students are being placed with an IEP when the issue is not a physical, learning, social, or emotional disability at all. The students may need extra support in some areas to be successful, but that support does not need to come from the student being placed with an IEP and all of the stigma and expense that comes from the placement. Also, there are students who should be placed with an IEP and receiving special education support services who are not being identified for this support. This is where an accurate means to predict the placement of a student with an IEP can be a valuable tool in providing the appropriate support needed for the student. Such an early warning system of student future potential of needing special education services through the implementation of an IEP for the student could not only save school districts money by the ability to intervene with the student before an IEP may be necessary, but it could also save untold social and emotional stigma for the student when placed with an IEP.

While this study has the potential to help the large California urban school districts in better serving students by predicting potential at-risk students, a great deal of precaution and care must be taken regarding the interpretations and actions taken that are based on this IEP prediction data. Although it could be a useful tool for predicting students who may be at-risk of being designated with an IEP, the predictors may not be without error and may have the potential to misidentify students as either false positives or false negatives for being designated with an IEP. This issue provides both social and ethical considerations for the educational practitioners within large California urban school districts. If a student is predicted as having the potential of

being designated with an IEP, it is essential to have several social and ethical safeguards in place to ensure that the designation does not become a self-fulfilling prophecy for students who are identified by the predictors. If students perceive that they have risk factors that could predict placement of the student on an IEP, the students' behaviors may alter in such a way as to conform to the prediction. The change in behavior may hinder any attempts at support provided to the students to try to intervene and ameliorate the risk factors exhibited by the students. Thus, any advantage gained by knowing the risk factors of the students is eliminated in the students changes in behavior.

Regarding scholarly significance, this study added to the current body of research regarding the predictive validity of specific independent indicators within large California urban school districts.

Definition of Terms

Individual Education Plan (IEP): A written plan/program developed by the schools' special education team with input from the parents and specifies the student's academic goals and the method to obtain these goals (Title 34 *Code of Federal Regulations* Section 300.22).

Students with Disabilities (SWD): Students who have an Individual Education Plan and have been assigned a disability code (Title 34 *Code of Federal Regulations* Section 300.8).

English language learner (EL): A student who grew up in a home speaking another language besides English or in a bilingual home but who is not completely fluent in English based on a local English language proficiency assessment.

Non-English learner (non-EL): This term references students who were born in an English-speaking home and who learn only in English.

Limitations

There were several limitations to this research project. First, the research came from existing secondary data. Therefore, the researcher could only use what was available and in the form in which it was collected and stored. Second, the data did not give the researcher the reasons why students were designated with an IEP. It only showed that students had an IEP and the nature of the specific disability. Third, the data was limited to students enrolled in a large California urban public-school district during their third through eighth grade years in the school year 2017/18 and did not include home school students, private school students, or students not enrolled in school during the 2017/18 school year.

Delimitations

The first delimitation of this study was the selection of the large California urban school district. I selected the district because of its size to obtain a sufficient number of students in the cluster sample and because of the district's demographic diversity. In addition, I chose to use data only from the 2017/18 school year since this was the most recent year where all data are complete. I also chose to focus only on grades three through eight and omit grades kindergarten through grade two and grade nine through grade twelve. This was because grades three through eight were the only contiguous grades which administer the Smarter Balanced Summative Assessments. The only other grade the Smarter Balanced Summative Assessment was administered in California was in grade eleven.

Summary

Students who are designated with an IEP face a harmful and negative stigma of receiving special education services (Heller, Holtzman, & Messick, 1982). To help prevent students from being designated with IEPs, districts provide a variety of interventions to support students.

However, those interventions are not implemented for students until they are struggling or already deficient academically.

This study sought to test the predictive validity of four demographic independent predictors and the California Smarter Balanced Summative Assessment in English language arts and in mathematics for students being designated with an IEP. If these factors can be used to predict students' placement with an IEP, supports could be provided previous to students becoming deficient academically and potentially necessitating students' designation with an IEP.

Chapter 2

Literature Review

This review of the literature begins with a section reviewing the history of special education as a response to the issue of educating students with disabilities. Within that section are the beginnings of federal special education oversight, the historical development of special education over the last forty years, and overrepresentation of racial/ethnic minority populations in identification of students for individual education plans (IEPs). The second major theme of the literature review is an analysis of the different demographic variables commonly used within special education. The section primarily focuses on the impact of race/ethnicity, socio-economic status, and English language status on students' designation with an IEPs. The final major theme of the literature review is an analysis of the interconnectedness of the three main demographic variables which impact student placement with an IEP.

Brief History of Special Education

The Education for All Handicapped Children Act (EAHCA) of 1975 was the first federal legislation which ensured due process rights for all students with disabilities, along with establishing individual education plans (IEPs) for all students with disabilities. EAHCA also determined that all students with disabilities should be educated in their least restrictive environment. A precursor event which led to the passage of the EAHCA was the Supreme Court case *Brown vs Topeka Board of Education, 1954,* which established the foundation that separate but equal is not equal. It also served as the basis for legal actions brought by the parents of students with disabilities to guarantee that their children had the right to a free and appropriate public education (FAPE). Two such cases occurred in 1972, *Pennsylvania Association for*

Retarded Children vs Pennsylvania and *Maryland Association for Retarded Citizens vs Maryland* both ruled that children with exceptionalities/disabilities were entitled to FAPE.

After these cases, the United States Congress initiated an investigation into the status of students with disabilities and the education they were receiving. The investigation found that of the estimated 8 million students with disabilities, only 3.9 million were receiving an appropriate education. About 1.75 million students with disabilities were receiving no education at all and 2.5 million students with disabilities were not receiving an appropriate education. After the investigation, Congress passed the Rehabilitation Act of 1973, which guaranteed and enforced the right of children with disabilities to receive a free and appropriate public education.

In 1990, the EAHCA was reauthorized and renamed the Individuals with Disabilities Education Act (IDEA). The IDEA of 1990 expanded the inclusion of students with disabilities in general education classes and increased the participation rights of parents to be involved in the educational decisions of their children. The IDEA of 1990 was amended in 2004 and became the Individuals with Disabilities Education Improvement Act of 2004. IDEA 2004 addressed ongoing problems with the over-identification of minority children to be designated with an IEP. Some of the specific issues that IDEA 2004 was designed to address included the situation that more minority children continued to be served in special education than would be expected from the percentage of minority students in the general school population and the information from studies that had found that schools with predominately white students and teachers have designated disproportionately high numbers of minority students with an individual education plan. This situation has come to be known as disproportionality or overrepresentation.

Background of the Placement of Students with IEPs

Special education services for students with an IEP is a system of support for students determined to have disabilities that interfere with the students' opportunity to learn, access, and be successful in the general education system without some type of additional academic, emotional, and/or social support. Special education has made significant improvements in policy, research, and practice in its short history. Students with disabilities were severely underserved prior to 1975, when the EAHCA was enacted (Artiles, Kozleski, Trent, Osher, & Ortiz, 2010).

The processes and procedures for identifying students for special education services are relatively consistent throughout the United States since special education is a federally mandated program (IDEA, 2018). A concern that a student may not be achieving in one or more academic, social, or emotional areas is most often expressed by the parent/guardian of the student or the classroom teacher of the student. The concern(s) expressed may then be discussed by a school committee which meets regularly to monitor concerns about students on a periodic basis. The committee usually recommends some type of interventions to be tried to help the student gain success in the area(s) of concern. The student is monitored to determine the success of the interventions being applied. If the interventions are not being successful, the student may be recommended for assessment for placement with an IEP. Also, at anytime during the process, the parent may request that the student be assessed for placement with an IEP. Either way, at this point a plan is determined for the student to be assessed in the areas of concern expressed by the parent and/or committee. When the assessments are completed, an IEP meeting is held with the parent and staff members to look at the results of the assessments and determine the eligibility of the student for placement with an IEP. This is where the process may not be purely objective, but a subjective judgement factor may enter into the process in some areas of disability of the

student. The consequences of this decision can impact the student in future academic, social, and emotional endeavors not only in the K-12 experience, but well beyond into future potential in higher education and life.

If the only factor determining a student's placement in special education services was the genetic disability with which the student was born, or experienced as the result of some trauma, the proportion of students receiving special education services within each disaggregated subgroup should approximately mirror the proportion of each of those disaggregated subgroups within the school, district, state, or nation which is being measured. However, this is not always the case. There are times when an overrepresentation of minority racial/ethnic subgroups exist within a school, district, state, or nation.

Disproportionality in the Designation of Students for Special Education Services

In this second theme, socio-economic status (poverty), race/ethnicity, English language learner status, and designation for special education services are discussed. Research on the connections between poverty, race/ethnicity, English language learners, and designation for special education services began in the late 1960's and is ongoing. Much of the research that has been done has focused on the disproportional overrepresentation of historically underserved populations of students receiving special education services. One of the early papers written on the topic of disproportional overrepresentation was by Lloyd Dunn in 1968. His article has been cited in many subsequent articles that have been written on the topic of disproportional overrepresentation. Dunn looked at data compiled by the United States Office of Education. In his work, he concluded that there is disproportional overrepresentation of students of minority race/ethnicity, of students in poverty, and of students who are English Language Learners designated for special education services.

Disproportional overrepresentation reached the court system in 1971 with the legal case of an African American student in *Larry P. vs The San Francisco Unified School District, The California State Board of Education, and State Superintendent Wilson Riles.* At that time, 10% of students in the state of California were African American, while 25% of the students enrolled in intellectual disability classes at that time were African American. The court determined that the use of Intelligence Quotient (IQ) tests were leading to a disproportionate number of African American students being placed in special education classes and therefore, was no longer to be used as an assessment to determine eligibility for an IEP for African American students. Legal action involving disproportionality in racial/ethnically diverse subgroups continued in *Marshall, et al. Vs The state of Georgia, 1984.* The case involved the inappropriate referrals of students for special education services. The court determined that there was no standard process for students to obtain individualized help in the general education classroom for learning difficulties. Instead, students (mostly African American) usually ended up in special education because this was where individualized supports were offered for struggling learners. The result was the removal of African American students from general education classes and a disproportionate number of African American students being placed in special education classes. The result of this in the state of Georgia, and around the nation, was the implementation of supports offered in the general education setting which must be provided for students before they are considered for designation for special education services. Students could not be placed in a special education setting without research-based and well-documented interventions being put into effect to support struggling students' opportunity to learn.

Only over the last twenty years has research begun to focus on the variables that may contribute to the disproportionality, particularly as it is required to be monitored by IDEA 2004.

While monitoring disproportionality is an important task for local, state, and federal agencies, the implementation of the monitoring task does not address the factors which may contribute to the existence of the disproportionality. Research has focused on three main factors considered to contribute to disproportional representation (Artiles, Kozleski, & Trent, 2010): race/ethnicity, poverty, and English language learner status. The first factor, race/ethnicity, is evident in research; such as Guiberson's (2009) study on Hispanic representation in Special Education and Artiles (2011) work to show the racialization of ability. The second commonly-studied variable contributing to disproportional representation in special education services is poverty, also referred to as low socio-economic status. Learning disability placements have been associated with low socio-economic status (Blair & Scott, 2002), childhood poverty and disability (Fujiura & Yamaki, 2000), and identification of disabilities in pre-school children living in poverty (Peterson, et al., 2011). The third factor looked at regularly in research is English language learner status, such as the disproportionate special education classification of English as a second language students (Fernandez & Inserra, 2013), and language minority learners in special education (Samson & Lesaux, 2009). Similarly, studies such as Perkins, Finegood, & Swain (2013) look at the intersections between poverty and language development, pointing to the difference between language acquisition deficits and language disability issues. Language acquisition is the process by which children learn a language. Language disability is any significant difficulty with impairment of language. The problem that education professionals encounter is determining between when a student may be experiencing a slower language acquisition process and when a student has a language disability.

Poverty and Designation for Special Education Services

The measurement used for poverty in educational settings is the percentage of students qualifying for free or reduced lunch through the National School Lunch Program (NSLP). As poverty is discussed in this section and throughout this writing, it refers to students who qualify for free or reduced lunch in the NSLP. Early writing on the connection between poverty and the designation of students for special education services was done by Hobbs in his book *Issues in the Classification of Children* (1975). Poverty has been discussed as a much more accurate predictor of student success and school failure than race/ethnicity (Hodgkinson, 1995). Hodgkinson proposed that it may be time to go directly to poverty and see about desegregating it. He argued that economic desegregation could address the disproportional overrepresentation in special education classes more effectively than looking at race/ethnicity and addressing the poverty issue could provide a more equitable education for all students. This can be done by state departments of education and local school districts developing a more equitable way of financing education. Spending an equitable amount on every student does not mean spending an identical amount on every student. Some students, such as students with disabilities, might require a higher spending level than other students in order to be treated equitably (Hodgkinson, 1995). In the state of California, the local control funding formula or LCFF, implemented by former Governor Jerry Brown and the California Department of Education, has attempted to address this equity issue. The LCFF provides additional funding for local education agencies who have significant percentages of students (above 55%) who are socio-economically disadvantaged (qualify for free or reduced lunch), are English language learners, or who are children in foster care. The premise of this funding method is that students who fall into one or more of these categories may require additional supports to experience academic success (California

Department of Education, 2019). However, no additional funding is provided by the state of California for students with IEPs who are receiving special education services.

Poverty's impact on designation for special education services was investigated in a study by MacMillan and Reschly (1998), where the researchers determined that socioeconomic status rather than race/ethnicity is a greater risk factor for students encountering drastic and ongoing academic problems in public schools. MacMillan and Reschly posited that poverty is a much clearer indicator of academic disadvantage than race/ethnicity minority status. Yet, just showing that poverty impacts student achievement is not equivalent to showing that poverty causes racial/ethnic disproportionality in special education (Skiba, Poloni-staudinger, Simmons, Feggins-azziz, & Chung 2005). However, the relationship between poverty and school readiness is a topic that has been documented in research studies and review articles (National Research Council, 2002; Phillips, Brooks-Gunn, Duncan, Klebanov, & Crane, 1999).

The designation of students with IEPs has been associated with low socioeconomic status (Blair & Scott, 2002), childhood poverty and disability (Fujiura & Yamaki, 2000), and pre-school children living in poverty (Peterson, et al., 2011). In the United States in 2007, the percentage of low socioeconomic students receiving special education services was greater than that of non-low socioeconomic students (United States Department of Education, 2007). In California in 2018, 67.5% of students on IEPs were socioeconomically disadvantaged compared to 60.8% of the general population (California Department of Education, 2019). Research conducted by Skiba, et al. (2005) points to the possibility that low socioeconomic students are being overidentified for special education services. Their research found that low socioeconomic status is one part of a complex set of factors contributing to African American disproportional overrepresentation in special education. Students who are low socioeconomic status start their

education with reduced educational readiness, which then continues and even increases through the students' academic experience in school (Engle & Black, 2008). These low socioeconomic students, who already face significant educational challenges, are then overrepresented in special education classes that produce outcomes that may increase the limitations on their education (Artiles, Kozleski, & Trent, 2010).

Alfredo Artiles (2005, 2008, 2010, 2011) studied potential solutions to students in poverty being disproportionally overidentified for special education services. These students in poverty, who already face significant educational challenges, are then disproportionally placed in special education classes that produce outcomes that may increase the limitations on their education. He proposed that the focus change from being on the dilemma of students being different, which causes seemingly irresolvable paradoxes, to looking at students from a cultural perspective. Artiles also proposed that future research should look at the cultural issues associated with poverty in determining the root causes of why students in poverty are disproportionally overrepresented in designation for special education services.

Poverty as a cause of disproportional overrepresentation in special education services is a potential area of concern because the United States Department of Education does not require monitoring of students in poverty for disproportional overrepresentation based on IDEA 2004. The United States Department of Education requires states to monitor disproportional overrepresentation in designation for special education based on race/ethnicity and based on discipline suspension and expulsion data. This means there could be a disproportional representation of students of poverty in special education which goes unnoticed, because what is not monitored by schools is not a focus of schools.

Poverty not only can have a negative impact on disproportional overrepresentation of students receiving special education services, but it also has a detrimental impact on students' ability to learn and teachers' capacity to teach. This issue was raised by teachers in a qualitative study by Skiba, Kohler, Wu, Simmons, Ritter, & Henderson (2006). The staff members' feelings of frustration were magnified by the lack of resources that schools and districts had to deal with the students and improve their situations and chances of success. Instead of the school having the resources to address the situation, teachers felt that the resources of the school were actually shrinking at a time when the needs of the students were greatly increasing. This lack of resources to deal with the impact of poverty on student readiness for school and student achievement then increases the likelihood that students in poverty may be referred for special education services to address the academic needs of the students that have not been able to be met with general education services. General education teachers often view special education as a rescue for struggling students in the face of dwindling resources, even if the student does not have a learning disability (Cameron & Cook, 2013). While this tactic may not be explicitly deliberate on the part of educators to help these students, the tactic may be a natural reaction to a situation that appears to be irresolvable without some means of additional support that otherwise doesn't seem to be available for the students.

In a survey of teachers concerning the cause of disproportionality of representation of students receiving special education services, the leading cause of disproportional overrepresentation of students receiving special education services indicated by the respondents was poverty (Othman, 2018). Poverty is a factor that needs to be investigated to determine its impact on the issue of disproportional overrepresentation of students being designated with an IEP and receiving special education services (Sullivan, & Bal, 2013).

Race/Ethnicity and Designation for Special Education Services

Another variable or predictor which impacts the designation of students with an IEP and special education services is race/ethnicity. Race/ethnicity for educational institutions is determined by parents' designation on the enrollment sheet when students register to begin school. This information is input into a school district's student information system and the data are used for various demographic purposes. From the time of the court case *Larry P.* in 1971, race/ethnicity has been examined as a potential issue affecting the designation of students for special education services. The issue of race/ethnicity in the referral of a student for an IEP to receive special education services was again ruled on by the court in the *Marshall* case in 1984. These two court cases plus other legal actions taken during the 1970's and 1980's laid the foundation for race/ethnicity as a strong factor to be considered as contributing to disproportional representation of students designated for special education services. The importance of race/ethnicity in disproportionality was climaxed by the passage of the Individuals with Disabilities Education Act (IDEA) of 2004 which included the requirement that states monitor the disproportional overrepresentation of race/ethnicity in students with an IEP and receiving special education services.

Research has explored the impact of race/ethnicity as a factor in the designation of students for special education services over the last 40 years. Research in New Jersey school districts by Brady, Manni, and Winikur (1983) revealed that, despite systems put in place to address racial/ethnic disproportional representation, racial/ethnic disproportionality still existed in the New Jersey schools studied. Even though the study is dated, the information is important because it shows that even when a district complies with all federal regulations, compliance is not enough to change racial/ethnic disproportional representation of minority races. Since then,

many articles have been written and studies have been performed looking at the impact of race/ethnicity in the designation of students for an IEP to receive special education services such as Serwatka, Deering, and Grant (1995) who researched the disproportionate overrepresentation of African American students in emotionally-disturbed classrooms. Patton (1998) wrote about the disproportional assignment of African American students to special education courses. O'Connor and Fernandez (2006) looked at the impact of school processes, policies, and culture in the designation of students for special education services. Blanchett (2007) looked at the disproportionate overrepresentation of African American students in special education due to white privilege and racism. Morgan, Farkas, Hillemeier, and Maczuga (2017) did research to determine if disproportionality related to race/ethnicity is supported by data. Research by Othman (2018) looked at race/ethnicity disproportional overrepresentation in "judgement categories" for special education students. The research shows that disproportional overrepresentation in judgement categories tends to exist, whereas representation of non-judgement categories, such as visually impaired, hearing impaired, traumatic brain injuries, tends to mirror the proportion of students in the districts' general population.

Ongoing overrepresentation among certain racial/ethnic groups is a powerful indicator of systemic issues of inequality, prejudice, and marginalization within the education system (Sullivan, 2011). Reports of overrepresentation of certain racial/ethnic groups have contributed to special education being labeled as a modern form of institutional racism and a modern-day segregation of certain ethnic groups (Artiles & Bal, 2008; Blanchett, 2007; Manning & Gaudelli, 2006). The issue of overrepresentation of race/ethnicity is evident in research such as Guiberson's (2009) study on Hispanic representation in special education and Artiles (2011) work to show the racialization of placement of students on IEPs.

Disproportional overrepresentation of minority race/ethnicities is a premise that has been affirmed by data over the past 40 years. While the factors that contribute to the disproportionality of minority students are complex and interrelated, a common link that has been found is that minority students are more likely to be enrolled in lower-track courses that have weaker academic standards and they generally attend lower performing schools (Othman, 2018). While some suggestions for solutions have been made by educational leaders and researchers, there is not enough evidence that the suggestions have been put into practice. The impact of racial/ethnicity as a predictor of student designation with an IEP is a subject that requires further research (Arnold & Lassmann, 2003).

English language learner status and Designation for Special Education Services

Students are designated as English language learners (EL) based on their parents' responses on the home language survey required to be completed by parents at the time of the enrollment of their children in a school. In California, from 1994 to 1999, the number of native Spanish-speaking EL students placed in special education services increased 345%. Yet during that same time period, the number of students designated as Latino EL students increased only 12% (Samson & Lesaux, 2009). Research into the disproportional overrepresentation of EL students receiving special education services has yielded two different types of results. The first set of data have revealed that disproportional overrepresentation of EL students in younger grades, grade 2 and lower, does not exist. However, the second set of data has shown that disproportional overrepresentation of EL students designated for special education services at grades 3 and higher does exist (Artiles et al., 2005; Fernandez & Inserra, 2013; Samson & Lesaux, 2009). One reason lower-grade EL students are not designated for special education services as often as higher-grade ELs could be because of the increased academic supports

provided to students at the lower grades (Artiles et al., 2005). Another reason for the difference in the disproportional overrepresentation between younger grade students and upper grade students could be a hesitancy of teachers to designate EL students for special education services in the early grades because of a lack of expertise of the evaluator to determine the difference between language acquisition and language disability (Fernandez & Inserra, 2013). Increased attention to training in the differences between language acquisition and language disability in teacher preparation programs and at professional development offered by school districts could help address this issue. In the higher grades, disproportional overrepresentation of EL students designated for special education services could also be caused by the difficulty educators may have distinguishing between students who have a language disability and students who are working toward language acquisition. One of the implications of the research is that teachers need to be more thoroughly trained during teacher preparation classes and in professional development provided by school districts, in identifying and discerning the differences between language disabilities and language acquisition issues (Fernandez & Inserra, 2013).

Adding to the difficulty of potential identification issues for EL students is that students who are classified as ELs are typically a non-stable group of students, in part because of the way reclassification changes adjust student cohorts as students move through the grades. As students are reclassified as fluent English proficient (RFEP), they are removed from the cohort of students classified as ELs. This leaves the students who are having the most difficulty in English language acquisition as the students remaining in the cohort. To help provide consistency in the EL group of students, researchers have begun using an “ever-EL” designation for students. This includes students who are currently EL students as well as students who have been classified as RFEP (Umansky & Thompson, 2017). Applying the ever-EL framework to the research of

disproportional overrepresentation of EL students in special education services enables researchers to see more accurate patterns of EL representation in special education services. This ever-EL framework in researching EL disproportional overrepresentation in special education services needs more research with larger populations of students than have been performed to date (Umansky & Thompson, 2017). This more accurate picture of the EL cohort group which has been stabilized should provide better data upon which to perform the disproportional overrepresentation research.

Given these complicating factors that students face, and given the fact that many educators lack an understanding of second language acquisition, it is not surprising that EL students are at times incorrectly diagnosed with a special education communication disorder. Furthermore, even teachers who deeply desire to help their students may not understand the root cause of the struggles EL students have in speaking and learning. Often, this translates into too little attention given to the pre-referral process in special education; for example, teachers might be better to start with strategies to help students acquire English rather than begin the referral process for special education services. Consequently, students are often assigned with a special education communication disorder with the assumption that the problem lies with the child (Klingner & Harry, 2006), when simply it is a matter of not providing enough time or support for the second language acquisition process.

Students who are dually identified for EL services and special education services are pulled from their classes in elementary school to receive the extra support they need, based on the goals of their special education plan. They are also pulled for English Language Development Program classes. Consequently, their day is partitioned, and they have less time in their general education classroom and this results in fractured education (Sakash & Rodriguez-

Brown, 1995). At the middle and high school level, such dually identified students are often precluded from taking elective classes such as band, choir, or drama. This is troubling because such courses often inspire students to pursue other interests and to be more engaged in school in general – factors that promote persistence in school. Students who are dually identified are doubly stigmatized with special education and EL labels, and their special education goals may not address the real pathway to academic success: to increase their proficiency in English. If misdiagnosis and consequent misassignment of students to special education is due to a misunderstanding in the identification process, staff may want to take steps towards improving this process.

The relatively recent explosive growth in the EL population, along with the high stakes of English language acquisition and some of the differing results from the research, provide compelling reasons to do additional research into the connection between EL status and the likelihood that students will be designated with an IEP.

Gender and Designation for Special Education Services

In California in 2018, 67.4% of students on IEPs were male compared to 51.4% of the general student population (California Department of Education, 2019). However, gender equity does not mean that equal numbers of males and females should be identified for special education. The goal in addressing disproportionality by gender is to ensure that both boys and girls experience non-discriminatory referral and identification processes (Coutinho and Oswald 2005). The overrepresentation of specific student groups in special education is problematic if the services provided by special education are not meeting the needs of, or are harming, those students (Bruce &Venkatesh, 2014). Not only do more males have an IEP than females by a two to one margin, but the males in special education spend less time in general education classes

than their female special education peers (Stoutjesdijk, Scholte, & Swaab, 2012). Based on the data, the underrepresentation of females placed on IEPs may potentially be as large a problem as the overrepresentation of males placed on IEPs (Quinn & Wagner, 2013).

In general, behavior has a greater impact on determination for a referral for an IEP and special education services than the impact of academics (Hosp & Reschly, 2004; Skiba et al., 2008). Male students are much more likely to receive office disciplinary referrals than female students, to be referred to counselors for behavior issues, and to be suspended or expelled for behavioral problems (Dever, Raines, Dowdy, & Hostutler, 2016). These findings suggest that teacher expectations of student behaviors lead to patterns of discipline referral that could contribute to overrepresentation of male students on IEPs and placement in special education classes. Students are most often referred for placement on an IEP by the teachers in whose class they attend. Teachers see special education as one of the few resources they have to support students who are struggling in class. However, teachers tend to base their decisions on the behavioral and emotional needs of the students rather than using a data-driven approach (Dowdy, Doane, Eklund, & Dever, 2013).

Potential reasons for the overrepresentation of males being designated with IEPs and placement in the special education system include the biological disadvantage of males (due to slower maturation and x-linked disorders), higher activity levels, the overt nature of their misbehaviors, and teacher referral bias grounded in adult expectations for what constitutes appropriate classroom behavior (Coutinho and Oswald 2005). Females who are identified with a disability and placed on an IEP are frequently one of the few females in their special education classes. Therefore, the female students may experience vocational tracking and poor post-school outcomes (Ferri and Connor 2010).

Gender may be predictive of placement of students on an IEP and designation for special education services because of the significant disproportional number of male students with IEPs. However, more research is necessary to determine the factors leading to the disproportional number of male students with IEPs and receiving special education services.

Smarter Balanced Summative Assessment in English/Language Arts and Mathematics and Designation for Special Education Services

When students are referred for evaluation to determine eligibility to have an IEP and receive special education services, a variety of assessments are given based on the perceived needs of the students. These assessments cover a variety of areas such as psycho-educational, speech and language, health, academic, occupational therapy, functional behavioral, and physical therapy. However, these assessments are not given to all students to be predictive of designation with an IEP, but only to select students who are referred for IEP eligibility determination.

The Smarter Balanced (SBAC) summative assessment in English/language arts and the smarter balanced summative assessment in mathematics are given to all California public school students in grade three through grade eight and in grade eleven (California Department of Education, 2019). Therefore, if students' scores on these SBAC summative assessments can be used to predict the designation of students with an IEP, it could be beneficial because of the widespread use of the test in the eligible grades that are given the assessment.

Even with the wide-spread use of the SBAC summative assessment with most California public school students in grades three through eight, the researcher was not able to find any studies using either the SBAC summative assessment in English/language arts or mathematics to predict designation of students with an IEP. Expanding the search to any widely used standardized assessment still did not yield any results of studies investigating the predictive

properties of these assessments. Because of the lack of research in this area of standardized testing to predict designation of students with an IEP, this is an area that merits more investigation and research.

Interconnectedness of the Variables Impacting Disproportional Overrepresentation

Disproportional overrepresentation in special education services is a complex issue with many contributing factors. This area of focus examines the interconnection of poverty, race/ethnicity, and EL students in relation to designation of students for special education services. These factors can influence each other and be difficult to isolate in research. However, it is critical to attempt to determine which factors might be the root cause of the issue of designation of students with an IEP, and how these factors might interconnect with one another to exacerbate any disproportionality situation. While much of the research done on disproportionality in special education placement has focused on the examination of each of the variables considered to contribute to disproportionality in isolation, there may be interconnections between the variables which could impact the disproportional representation of students designated for special education services.

Poverty and the Connection with Race/Ethnicity in Special Education

While race/ethnicity is the focus of federal and state monitoring of disproportional overrepresentation in special education services, some research is showing that the disproportional overrepresentation could be more a reflection of student poverty in conjunction with students' race/ethnicity. Race/ethnicity has been a common proxy in place of poverty when looking at disproportional overrepresentation of placement in special education. That poverty and race/ethnicity are intertwined in predicting students' placement on an IEP was addressed in an article written by Hodgkinson (1995), where he investigates the history on the classifications

used for race and ethnicity to be used for the 2000 United States census. From the results of his work, he purported that the single focus of race/ethnicity in designation of students for an IEP and special education services has taken away focus from the more urgent issue in disproportional overrepresentation in special education, which is poverty. Poverty has had a greater negative impact on the quality of the lives of the students, no matter the race or ethnicity of the students involved. In 1995, analysis based on the Census Bureau's Survey of Income and Program Participation showed that 42% of students with disabilities lived in poverty, the majority of these being African American and Hispanic, compared with 13% of the general population of students (Fujiura & Yamaki, 2000). MacMillan & Reschly (1998) indicated that socioeconomic status rather than race/ethnicity as the greater risk factor for children encountering severe and persistent academic problems in our public schools.

However, instead of using race as the only proxy for poverty, researchers need to be more transparent at looking at all the factors that impact disproportionality in special education (Artiles, et al., 2010). One research study points out that although Latinos are disproportionately poor, this group is not overrepresented in special education at the national level (Losen & Orfield, 2002). This may be more reflective of the tendency for Latino representation to vary substantially based on the local level and is not representative of a national trend. However, more recent research shows that Latino EL students are disproportionately overrepresented in designation to special education services (Fernandez & Inserra, 2013). These conflicting research results have been challenging when looking at students who are Hispanic, Asian American, Native American, or EL being inappropriately overidentified for special education services based on their race/ethnicity or language use (Morgan et al., 2018). Hispanic, EL, Asian, and Native American have variously been found to be overrepresented, underrepresented, or as equally

likely as White or non-EL students to be designated for special education services. When addressing poverty, race/ethnicity and disproportional overrepresentation, it is important to not focus on poverty as a proxy for race/ethnicity, even though a large percentage of students in poverty are from traditionally underserved race/ethnicities. Poverty should be looked at because of its impact on the disproportional placement of students in special education services, not because it can be used to represent race/ethnicity. The importance of poverty on the impact of student placement in special education is significant enough to be looked at on its own. The public policy and focus on meeting the needs of children in poverty by providing meals, medical care, and housing to improve student achievement is a worthy and necessary effort. However, it is also important to focus on other factors, including policy development and implementation, research practices, teacher preparation, and school quality that address the race/ethnicity and poverty issue in disproportional overrepresentation in special education (Artiles, et al., 2010). Race/ethnicity and poverty are inextricably interconnected in society and much of the research fails to take this into consideration and instead breaks down the data by both race/ethnicity and poverty (MacMillan and Reschly, 1998). While monitoring and responding to disproportional overrepresentation in special education based on race/ethnicity and poverty is an important task, it is just as important that disproportional overrepresentation based on the interconnectedness of race/ethnicity and poverty also be monitored and responded to as necessary.

Poverty and the Connection with English Language Learners in Special Education

The influx of EL students into the schools of the United States is increasing at a rapid rate. According to the National Education Association in May 2018, they are the fastest growing student population and are projected to grow from 10% of the population now to an estimated 25% of the population by the year 2025. There is also an increasing problem with EL students

being over-classified in special education services (Sullivan, 2011). Data in some districts has shown that prior to third grade, there has typically been an underrepresentation of EL students in special education services, but from third grade onward, there has typically been an overrepresentation of EL students in special education services (Artiles et al., 2005). Researchers have posited that the rise is due to decreased language supports as students progressed through the grades (Sullivan, 2011). Another potential reason for the underrepresentation of EL students in the lower grades is that federal legislation states that ELs should be on grade level in English in three years (Fernandez & Inserra, 2013). This would push the timeline until EL students were determined to be below grade level to third grade for students who entered school in kindergarten and at higher grade levels for EL students who entered United States schools later than kindergarten. While there is substantial research connecting race/ethnicity with poverty and other factors, there is very little research looking at factors that are predictors of EL students being designated for special education services. The interconnection of poverty and EL is an area that needs more research to find the factors that would be predictors for student designation with an IEP and placement in special education services (Sullivan, 2011). As late as 2017, English Language Learners with special needs remains an under-researched student population (Kangas, 2017).

Although EL students with special needs requires more research, data shows that there is a disproportionate percentage of ELs designated for special education services in grade 5 and greater (Morgan et al., 2018). This disproportional overrepresentation of ELs in special education prohibits them from receiving the more appropriate services they need to make academic progress. EL students are the highest poverty students, they have the highest grade retention percentage of any group, and they have the highest dropout rates of any student group

(Duran, 2008). With the high needs of the EL student population, alternative strategies of addressing the students' needs must be researched, field tested, and implemented. If the disproportional placement of EL students in special education services continues, the EL population may overwhelm the special education system. In the meantime, training of general education teachers in strategies to meet the needs of EL students should be implemented to reduce the number of students receiving special education services (Fernandez & Inserra, 2013).

Complexities Impacting the Designation of Students for Special Education Services

Poverty, race/ethnicity, and EL have thus far been discussed in an examination of the disproportional overrepresentation of students designated with IEPs and determined to receive special education services. This area of focus explores the complex issues which may impact the disproportionality research. The variables of poverty, race/ethnicity, and EL status of students do not happen in isolation of each other, nor in isolation of other forces that may impact the factors of poverty, race/ethnicity, and EL status when considering designation for special education services. Some issues which may impact designation for special education services are the culture of schools and the conflicting results of research done on the topics poverty, race/ethnicity, and EL status in designation for special education services.

Impact of the Culture of Schools on Disproportionality in Designation of Students for Special Education Services

One of the issues that impacts the research of disproportionality of designation for special education services is the culture of the school where the student is located. Research that has focused on the impact of the culture of the school and how it impacts the propensity to assign certain populations of students to special education services before adequate general education interventions have been implemented for the students has been done by Artiles and Bal (2008).

From their research, Artiles and Bal determined that researchers should move beyond the focus on single groups (students in poverty, race/ethnicity, or EL status) in the school, and document the ways the culture of the area interacts with the student groups. Most educational research equates the culture of a group with the traits of the group, an assumption that can create problems with research when applied to schools (Gutierrez & Rogoff, 2003). While the larger group may embody some general characteristics, individuals within the group may not act the same way or possess the same cultural information. Culture is a complex issue whose impact has been neglected when looking at the designation of students for special education services.

Another complicating issue in the disproportionality in the designation of students for special education services is that the disproportionality only occurs in disability categories considered to be "judgement categories." Disproportionality of special education services for students in non-judgmental disabilities (disabilities whose diagnoses require limited inference on the part of the professional), such as vision impaired, hearing impaired, etc., is not an issue according to the research by O'Connor and Fernandez (2006). The proportion of students receiving these students based on race/ethnicity, poverty, and EL status was shown to be approximately the same as the proportion of students in the general population in the research group. Is this disproportionality in designation of students for special education services in these judgement categories due to the impact of the culture of the school or community? Is the disproportionality due to inaccuracies or bias in the assessments used to evaluate students for special education services? While this research may indicate that such bias may be at work, these questions will have to be more thoroughly addressed by another researcher, as this is not the main focus of this research project.

Conflicting Research in Connection with Disproportionality in Designation of Students for Special Education Services

At times over the years, the research on disproportionality in designation of students for special education services has produced conflicting results. An example of this conflicting research was produced by Paul Morgan and George Farkas, (2013). Their study looked at 21,000 students as they moved from kindergarten through eighth grade. The objective of the research was to study a cohort of students over time to investigate race/ethnicity disparities in representation in special education classes. Their study found that minority race/ethnicity students, when compared to their white peers, were underrepresented in special education classes, not overrepresented. Morgan and Farkas stated this underrepresentation may occur because evaluators may be more responsive to white parents who are more likely to solicit support for their children than minority race/ethnicity parents. They also suggested that, with the focus on race/ethnicity disproportionality in designation for special education services, evaluators may be hesitant to recommend a minority race/ethnicity student for special education even though the services may be needed. This study contradicts much of the last 40 years of research in disproportionality of race/ethnicity in designation for special education services. The reaction from other researchers and the federal Office of Special Education at the Department of Education accused Morgan and Farkas of using misleading data or that the study was filled with flaws and omissions. While their research has not been discredited, it has been called into question because of its disparate findings when compared to other research which has been done.

In a review of 22 research studies by Morgan et al. (2018), the author sought to determine if minority race/ethnicity has been disproportionally overrepresented in designation for special education services and, if so, to what extent that various minority race/ethnicities have been

disproportionally overrepresented. Studies using aggregate-level statistical controls were more likely to produce results showing that students representing minority race/ethnicities were more likely to be overrepresented in special education services than their non-minority peers. The few studies that used individual level data were more likely to find that minority race/ethnicity students were being under-identified for special education services. Morgan et al contributes this to the methodological contribution demonstrating that the direction of the disproportionality is attributable to race/ethnicity or language depends on the rigor of the covariate adjustment being used. They assert that future research should analyze individual-level data and control for individual confounds to better approximate contrasts between similar children. Considering these conflicting results, Morgan suggested that practitioners need to increase their use of screening and evaluation methods that are culturally sensitive and language sensitive. He also suggested that future research studies need to be carefully designed to produce accurate information for the researcher. Morgan believes that federal policies designed to reduce disproportional overrepresentation of minority race/ethnicity students may be making the problem of student achievement and academic success of minority race/ethnicity students worse because students who should possibly be receiving special education services are not receiving the services they should because the designation would cause the school district to be out of compliance with the federal requirements for disproportionality.

Concluding Thoughts

The issue of disproportional overrepresentation of certain groups of students designated with IEPs and receiving special education services has been an important topic of research for over five decades. A large number of research studies have been done on this issue, yet there still has not been any conclusive agreement as to what are the factors that lead to the disproportional

overrepresentation of students from certain subgroups being designated with an IEP and receiving special education services. The inappropriate placement of students with IEPs can often negatively affects students' placement in classes, causing them to feel incapable of learning, and reducing their elective options starting at the secondary level. The importance of these issues alone is enough to make additional research in this area valuable. The research of this study will add to the body of knowledge in the area of student placement on an IEP for special education services and potentially shed more light on an important issue valuable to so many students in our nation.

Chapter 3

Methodology

This study was a quantitative, ex post facto, cross-sectional study using secondary data. Binomial logistic regression was used to determine the extent to which race/ethnicity, socioeconomic status, English language learner (EL) status, gender, and third through eighth grade Smarter Balanced Summative Assessment scores in English language arts and math predict the placement of a student with an Individual Education Plan (IEP) during their third through eighth grade year.

The research questions addressed through this study were:

1) What is the impact of socioeconomic status, race/ethnicity, and EL status in predicting third through eighth grade student designation with an IEP?
2) What is the impact of socioeconomic status, race/ethnicity, EL status, and gender in predicting third through eighth grade student designation with an IEP?
3) What is the impact of the Smarter Balance Summative Assessment in English language arts, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP?
4) What is the impact of the Smarter Balance Summative Assessment in math, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP?

Sample

The study's sample came from a large, urban school district located in southern California. The school district was comprised of roughly 75,000 students of which 13% were white, 58% were Hispanic/Latino, 13% were African American, 7% were Asians, 3% were

Filipino, 3% were Multiracial, and a small remaining percentage were classified as other race/ethnicities. Additionally, 69% of the students received free or reduced lunch, 12% received special education services, and 19% of the students were English Learners.

The target population for this study were the students in a large urban district in southern California. The sample consisted of a sampling frame of third through eighth-grade students from the 2017-2018 school year from the large urban southern California district. This sample was composed of approximately 40,000 students who attended third through eighth grade in the large urban district in southern California during the 2017-2018 school year.

Variables

The variables of socioeconomic status, race/ethnicity, and EL status in this study were selected based on a review of the literature pertaining to factors which impact the designation of students with an IEP. These factors have been studied and reported on frequently. The variable of gender has been researched and reported on to a lesser extent. The variable of the Smarter Balance Summative Assessment as related to student placement on an IEP has not been studied, but is a factor the researcher believes could be predictive in nature. The following independent and dependent variables were selected and operationalized for this study.

Independent predictor variables

Race/ethnicity is conceptualized as a categorical variable based on parent/student self-identification of race/ethnicity. The variable is operationalized as Black/African American, Asian, Hispanic/Latino, White, and Other, which includes American Indian/Alaska Native, Filipino, Pacific Islander, and Two or more races. Poverty or socioeconomic status is conceptualized as a student who participated in or is eligible for the National School Lunch Program (NSLP) free and reduced lunch program. The variable is operationalized as a

categorical variable based on income information provided by students' parents on an annual basis and is identified as socioeconomically disadvantaged (1) or none (0). English language learner (EL) status is conceptualized as students eligible for a program for non-native English speakers. The variable is operationalized as a categorical variable based on information provided by the parent on the home language survey completed at the time of enrollment of the student in school as an English learner (1) or Not English learner (0), which is composed of the classifications of English only, Initially fluent English proficient, and redesignated fluent English proficient. Gender is conceptualized and operationalized as a categorical variable based on male or female gender identification, male (1) or female (0).

The Smarter Balanced summative assessment in English language arts is conceptualized as an indicator of knowledge and skill relative to the California Common Core State Standards (CCSS) for English language arts from which instruction is derived, and as an indicator of student achievement in English language arts and academic preparedness for college. The variable is operationalized as a continuous variable based on state English language arts test score: (2000 – 3000). The Smarter Balanced summative assessment in mathematics is conceptualized as an indicator of knowledge and skill relative to the California Common Core State Standards (CCSS) for mathematics from which instruction is derived, and as an indicator of student achievement in mathematics and academic preparedness for college. The variable is operationalized as a continuous variable based on state English language arts test score: (2000 – 3000).

Table 1

Independent Variables

Variable	Operationalization	Research Question #
Poverty/Socioeconomic status	(Dichotomous) Student received free or reduced lunch = 1. Student did not receive free or reduced lunch = 0.	RQ #1,2,3,4
Race/Ethnicity	Students categorized as African American, Asian, Hispanic/Latino, White, or Other	RQ #1,2,3,4
English Learner status	(Dichotomous) Students classified as English Learner categorized in a group as "English Learner" = 1. Student classified as English Only, Initially Fluent English Proficient, Redesignated Fluent English Proficient categorized in a group as "Not English Learner" = 0.	RQ #1,2,3,4
Gender	(Dichotomous) Male = 0, Female = 1	RQ #2
Smarter Balance Summative Assessment English/Language Arts	(Continuous) Smarter Balance Summative Assessment English/Language Arts score between 2000 and 3000.	RQ #3
Smarter Balance Summative Assessment Mathematics	(Continuous) Smarter Balance Summative Assessment Mathematics score between 2000 and 3000.	RQ #4

Dependent variable

The dependent variable was the students' classification on the "Disability Status" information in the California Longitudinal Pupil Assessment Data System (CALPADS) which

will be categorized as “No IEP” or “IEP” based on the definitions found in the California Department of Education’s *California Longitudinal Pupil Assessment Data System Technical Guide* (California Department of Education, 2018).

Students were categorized as “IEP” if the student has one of the following designations in the “Disability Status” on CALPADS: Hard of Hearing, Deaf, Intellectual disability, Speech language impaired, Visual impaired, Emotionally disturbed, Orthopedic impairment, Other health impairment, Established medical disability, Specific learning disability, Deaf-blind, Multiple disabilities, Autism, or Traumatic brain injury. Students will be categorized as “No IEP” if none of the above disabilities are listed in the “Disability Status” in the CALPADS system.

Table 2

Dependent Variable

Variable	Operationalization	Research Question #
IEP (Disability) status	(Dichotomous) Student classified as having a disability code categorized in a group as “With IEP” = 1. Student classified as not having a disability code categorized in a group as “No IEP” = 0.	**RQ #1,2,3,4**

Data Collection Procedures

The secondary data for this study is stored in the California Department of Education’s CALPADS information system. The student demographic data was collected and uploaded semi-annually to the CDE CALPADS application by the large urban southern California school district’s data analyst and was then validated by the school district before final certification by

the CDE. The Smarter Balance Summative Assessment data was loaded directly to CALPADS by the students' online completion of the Assessment. Upon approval of the researcher's dissertation proposal and IRB proposal, a formal request was made to the urban California school district's superintendent and data analyst and from the CDE for permission to retrieve the 2017-2018 student achievement and demographic database files from the CDE CALPADS. Student data downloaded for this study was stored in a secure file on the researcher's computer that is password protected and will be deleted within three years of the completion of this dissertation. An encrypted copy of the data was sent to the methodologist for the researcher in order to perform an analysis of the data.

Data Analysis Procedures

Binomial logistic regression was an appropriate model for this study because the model calculates, "…the probability of being in a particular category of the dependent variable given the independent variables" (Laerd Statistics, 2015). To utilize binomial logistic regression, this study met the seven assumptions associated with the statistical analysis model. This study met the first two assumptions for a binomial logistic regression because there was one dependent variable that was dichotomous ("IEP" vs. "No IEP"), and one or more independent variables that were either continuous or nominal (Race/ethnicity, Socioeconomic status, English learner status, Gender, Smarter Balanced Summative Assessment English language arts, Smarter Balanced Summative Assessment English mathematics). The third assumption of binomial logistic regression was met because there was an independence of options and mutual exclusivity among student placement within the dependent and independent variables. The fourth assumption of binomial logistic regression was that there was a minimum of 15 cases per each individual student variable (Laerd Statistics, 2015), which this study met.

Assumptions five, six, and seven relate to how the data from the study fits the binomial logistic regression model and required specific tests that, among other options, were completed through SPSS. Assumption five sought out a linear relationship between the continuous independent variables and the logit transformation of the dependent variable. The Box-Tidwell (1962) procedure and the binary logistic procedure within SPSS was used to test for this assumption (Laerd Statistics, 2015). Assumption six assumed no multicollinearity. The Statistical Package for the Social Sciences (SPSS) reviewed the correlation coefficients and Tolerance/VIF values to assure that two or more independent variables are not highly correlated with each other. Finally, assumption seven assumed no significant outliers, high leverage points or highly influential points. Casewise diagnostics within SPSS was used to detect outliers within the data set (Laerd Statistics, 2015).

The specificity and sensitivity of the student IEP placement independent predictors was also analyzed. “Sensitivity” refers to, “…the percentage of cases that had the observed characteristic (“yes” for “IEP”) which were correctly predicted by the model (i.e., true positives) (Laerd Statistics, 2015).” Conversely, “Specificity” refers to, “…the percentage of cases that did not have the observed characteristic ("no" for “No IEP”) and were also correctly predicted as not having the observed characteristic (i.e., true negatives) (Laerd Statistics, 2015).” These two measures are critical in interpreting the predictive validity of each student IEP predictor. Ideally, the student IEP predictors only flagged students who actually were placed on IEPs (true positives) and not flag students who were not placed on IEPs (true negatives). Unfortunately, predictions are imperfect and misidentifications can occur. This means that sometimes, the student IEP predictors identified a student as a potential IEP placement who actually was not placed on an IEP (false positive), as well as failed to flag students who were

actually placed on an IEP as not being placed on an IEP (false negative). The more false positives and false negatives that were inaccurately flagged or missed by the student IEP predictors, the less likely educational practitioners will value the identification capabilities of the predictors. More false positives and false negatives mean that the predictors are not effective in accurately predicting students who may be at risk of being designated with an IEP, thus the variables are not useful as predictors. Thresholds to balance both specificity and sensitivity were established to maximize the predictor's true positive and true negative identifications and minimize false positive and false negative identifications.

Validity and Reliability

The internal validity threats related to instrumentation, selection, testing, maturation, statistical regression, and experimental mortality were minimal due to the nature of secondary data analysis. The primary threat to the external validity was the study's use of a convenience sampling method. The decision to use this particular method was based on the need for urban school data as well as the relative ease of access to data from the large southern California urban school district. Consequently, the study's findings and results are highly contextualized. In addition, the generalizability of the results is limited as the data analysis was sourced from only one large southern California urban school district.

The threats to reliability of the study's findings were primarily based on the accuracy of the student data. The majority of the secondary student data was collected and stored in the districts' student information system (SIS), validated by school-level and district-level employees, and finally audited and confirmed through the California Department of Education processes, thus, the data was deemed reliable.

Research Ethics

Since this study analyzed de-identified student data retrospectively, there were minimal risks or negative consequences for participants. As this research study involved analyzing private data in the form of education performance, and such data is federally protected through the Family Education Rights and Privileges Act (FERPA), then IRB approval was requested through George Fox University prior to conducting research. All the data was provided with anonymity; thus, all participants remained anonymous and confidentiality was maintained. None of the data reports in this study included any student identifiers. The data was presented in such a way as to not identify the school district used to reduce any risk to participants.

Chapter 4

Results

The purpose of this study was to investigate and analyze the impact of socioeconomic status, race/ethnicity, and English learner (EL) status in predicting third through eighth grade students' designation with an Individual Education Plan (IEP) within a large, urban, California school district. Student data from the Venti Grande Unified School District's 2017/2018 school year were analyzed to determine the predictive validity of the three independent variables of socioeconomic status, race/ethnicity, and EL status. The predictors, or independent variables, have been identified in the education research literature as having a connection with student placement with an IEP (Blair & Scott, 2002; Fernandez & Inserra, 2013; Morgan, Farkas, Hillemeier, and Maczuga, 2017). A total of six variables were included in the analysis. Data were downloaded from the California Department of Education's (CDE) *California Longitudinal Pupil Achievement Data System*. Data were imported into Excel and then uploaded into IBM SPSS Statistics 25 for statistical analysis. Binomial logistic regression was used to explore the relationship between student designation with an IEP and the six independent variables or predictors. In this chapter, the methods used to link the data sets and derive the research sample will be described, as well as the demographic characteristics of the sample. Furthermore, the results of the logistic regression model utilized in this study will be explained. Lastly, the results of testing key assumptions associated with the logistic regression model will be discussed.

Description of Sample

Overall, the 2017-2018 school year from the Venti Grande Unified School District contained a total of 33,995 students in grades three through eight with complete data for this study's unique variables. Students' data were considered complete if information was available

for each of the independent variables as well as the dependent variable. The frequency distribution of student race/ethnicity was as follows: 196 (0.6%) American Indian/Native Alaskan; 2,780 (8.2%) Asian; 4,579 (13.5%) Black/African American; 1,153 (3.4%) Filipino; 19,440 (57.2%) Hispanic/Latino; 640 (1.9%) Pacific Islander; 4,483 (13.4%) White; and 724 (2.1%) Declined to state. There were 10,326 (30.4%) students who did not receive free and reduced lunch and 23,590 (69.6%) students who did receive free and reduced lunch. There were 6,895 (20.3%) English learners and 27,019 (79.7%) students who were not English learners in this study. Of the sample, 16,339 (48.1%) were female students and 17,656 (51.9%) were male students. In addition, 29,396 (86.5%) of the students did not have an IEP, whereas 4,599 (13.5%) of the students had an IEP.

There was a relatively even distribution of students at each grade level. The sample was composed of 5,467 (16.1%) students in grade three, 5,671 (16.7%) students in grade four, 5,722 (16.8%) students in grade five, 5,716 (16.8%) students in grade six, 5,695 (16.8%) students in grade seven, and 5,724 (16.8%) students in grade eight. Table 3 below provides a summary of all the demographic data in this study.

Table 3

Independent Variables Frequency

	Frequency	Percent (%)
Race/Ethnicity		
American Indian/Native Alaskan	196	0.6
Asian	2,780	8.2
Black/African American	4,579	13.5
Filipino	1,153	3.4
Hispanic/Latino	19,440	57.2
Pacific Islander	640	1.9
White	4,483	13.2
Declined to State	784	2.1
Socioeconomically Disadvantaged		
Yes	23,590	69.6
No	10,326	30.4
English Learner Status		
English Learner	6,895	20.3
Non-English Learner	27,019	79.7
Gender		
Female	16,339	48.1
Male	17,656	51.9
Individual Education Plan		
No IEP	29,396	86.5
IEP	4,599	13.5
Grade Level		
Grade 3	5,467	16.1
Grade 4	5,671	16.7
Grade 5	5,722	16.8
Grade 6	5,716	16.8
Grade 7	5,695	16.8
Grade 8	5,724	16.8

Variables

This study utilized a logistic regression model with one bivariate categorical dependent variable (designation with an IEP), and six independent variables, both categorical and continuous in nature.

Independent Variables

In addition to the demographic variables summarized in Table 3 above, this study utilized two continuous independent variables, the Smarter Balanced Summative Assessment (SBAC) in English/Language Arts and the SBAC in Mathematics. The SBAC are measures of student achievement which are administered annually to students late in the school year. The SBAC are criterion-referenced, meaning performance is compared to pre-determined criteria or standards and students receive a score between 2,000 and 3,000.

Dependent Variable

The dependent variable for the study was a dichotomous measurement of students' designation with an IEP. Students were classified as either "IEP" or "No IEP" based on their disability code. Students were considered "IEP" if the students had a disability code greater than 200. Students were considered "No IEP" if the students had a disability code equal to 200. Table 4 below summarizes the dependent variable information.

Table 4

Dependent Variable Frequency

	Frequency	Percent (%)
No IEP	28,890	87.1
IEP	4,284	12.9

Analysis

Binomial logistic regression was used to analyze the data for two primary functions. First, the statistical analysis determined if any of the independent variables had a statistically significant effect on the dependent variable. Second, the analysis explained how well the logistic model predicted the dependent variable (Laerd Statistics, 2015). For this type of analysis, SPSS first analyzed the model with only the constant and no independent variables added. Table 5 demonstrates the model's predictions with no independent variables added, and all students simply classified as "No IEP". By predicting that all 33,174 students were "No IEP", the model was 87.1% accurate.

Table 5

Step 0 Classification Table

			Model Predictions
Step 0	Predicted No IEP	Predicted IEP	Percentage Correct (%)
Observed No IEP	28,890	0	100.0
Observed IEP	4,284	0	0
Observed Percentage			87.1

After determining the model's accuracy without independent variables, the Omnibus Test of Model Coefficients was utilized to demonstrate the overall statistical significance of the model. This test provides insight regarding how well the model predicts the dependent variable without independent variables. As seen in Table 6, the Chi-square value was 6334.712 and the model was statistically significant at $p < .0005$.

Table 6

Omnibus Test of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	6334.712	12	0.000
	Block	6334.712	12	0.000
	Model	6334.712	12	0.000

The Hosmer and Lemeshow Goodness of Fit Test was used to analyze how poorly the model predicted categorical outcomes (Laerd Statistics, 2015). In other words, this test helps to analyze how well the model was able to predict outcomes compared to the actual observed outcomes. If a substantial portion of the predicted outcomes does not align with the observed outcomes, the model could be considered to not be a good fit. With this specific set of data, the model had a Chi-square value of 48.381 and was statistically significant ($p = .000$), which indicated that the model was not a good fit. However, just because the Hosmer and Lemeshow Goodness of Fit Test did not show the model was a good fit, it does not mean the model cannot be effective in predicting outcomes.

The Cox & Snell R^2 and Nagelkerke R^2 values from the Model Summary were applied to better understand the amount of variance in the dependent variable that could be explained by the model (Laerd Statistics, 2015). According to the Model Summary, the explained variation in the dependent variables based on the model ranged from 17% (Cox & Snell R^2) to 32% (Nagelkerke R^2). Nagelkerke R^2 is a modification of the Cox & Snell R^2, the latter which cannot achieve a value of 1. For this reason, it is preferable to report the Nagelkerke R^2 value. In addition, the -2 Log Likelihood value was 19192.244. The change in log-likelihood indicates the amount of variance that is explained by the new model. The -2 Log Likelihood values are most effectively used to compare the extent to which a specific model explains the variance within the overall model when comparing different study outcomes of the same substantive problem.

Prediction. Binomial logistic regression estimates the probabilities of each of one of two events occurring. It is very common to use binomial logistic regression to predict whether cases can be correctly classified or predicted from the independent variables. After determining the fit of the model, binomial logistical regression was used to predict the probability that a student

would be classified as either having “No IEP” or an “IEP” based on a student’s independent variables. As seen above in Table 5, which did not include any independent variables, the model accurately predicted 87.1% of student outcomes without integrating the independent variables. The accuracy in classification increased to 89.3% when integrating the independent variables into the model (see Table 7). This increase in correct classification signifies that 2.2% of the observed variance in the model can be attributed to the independent variables (Laerd Statistics, 2015).

Table 7

Step 1 Classification Table

			Model Predictions
Step 1	Predicted No IEP	Predicted IEP	Percentage Correct (%)
Observed No IEP	28,706	184	99.4
Observed IEP	3,366	918	21.4
Observed Percentage			89.3

Sensitivity and specificity. Table 7 also displays the sensitivity and specificity of the model. The sensitivity of the model, which is the percentage of the cases that had the observed characteristics, “IEP”, and were correctly predicted by the model as having an “IEP” was 21.4%. Sensitivity and specificity in logistic regression analysis are also commonly categorized as either “true positive,” “true negative,” “false positive,” or “false negative”. In this regard, Table 8, line 1 represents the percentage of “true positives” predicted by the model.

Table 8

Classification Correct Table

	n	% Classification Correct
Correctly Predicted IEP	918	21.4%
Correctly Predicted No IEP	28,706	99.4%
Correctly Predicted Overall	29,624	89.3%

The specificity of the model is measured by the percentage of cases that did not have the observed characteristic and were correctly predicted as not having the observed characteristic (Laerd Statistic, 2015). In this case, the measurement represents the percentage of students with "No IEP" that the model was able to correctly predict. This measurement is also referred to as the percentage of true negatives. For this measure, the model correctly identified 28,706 students as having "No IEP". Therefore, the specificity of the model for true negatives is 99.4%, as shown in Table 8, line 2. Put differently, 99.4% of students that did not have an IEP were correctly predicted by the model.

The model also assessed false positives and false negatives within the data. The false negatives in this case were students that the model predicted as having "No IEP" but actually were students with "IEPs". The false negative percentage was 78.6%. One of the reasons for false negatives in the designation of students with IEPs is that teachers can overlook the academic deficiencies of students who are nice, compliant, obedient students. This type of student does not cause any issues in the classroom, follows all the rules, and is kind to the teacher and fellow students. This behavior can cause the teacher to mistake compliant classroom behavior with academic success, making the teacher overlook what might otherwise stand out as academic deficiencies and the need to be assessed for any IEP. The false positives in this model were students who were predicted to have an "IEP" but, in reality were students with an "No IEP". The false positive percentage was only 0.6%. Even though the percentage was small, one of the reasons for false positives in this model could be attributed to negative student behavior. Students who are not compliant with the standard rules in the classroom can be disruptive, causing the student to be removed from the classroom and miss instruction. If this occurs often enough, the student can become academically deficient, leading to assessment for designation

with an IEP and potential assignment with an IEP. When this happens, a student may be designated with an IEP when the issue was actually a behavioral problem.

Variables in the Equation. The contribution and statistical significance of each independent variable to the overall model was established to determine which variables had the greatest impact on predicting the dependent variable. The logistic regression model reveals eight significant predictors of student designation with an IEP: socioeconomic status (poverty), gender, English Learner status, the race/ethnicity status of American Indian/Native Alaskans, Black/African Americans, and White students, as well as the SBAC in English/Language Arts, and SBAC in mathematics. For independent variables to be significant, they must have a significance value $p < 0.005$. All statistically significant predictors were observed to have significance values with $p < .005$. Socioeconomic status (poverty), gender, English Learner status, the race/ethnicity status of American Indian/Native Alaskans, Black/African Americans, and White students, the SBAC in English/Language Arts, and the SBAC in mathematics all had significance values $p < 0.005$.

In addition to the statistical significance of each independent variable, SPSS incorporated the *B* coefficients (column "B") into the equation to predict the probability of an event (i.e. "IEP" or "No IEP") occurring. The coefficients help to explain the "change in the log odds that occur for a one-unit change in an independent variable when all other independent variables are kept constant" (Laerd Statistics, 2015). In order to help the interpretation of *B* coefficients, SPSS also includes the odds ratios for each independent variable within the "Exp(B)" column. This column explains the increase in the odds that a student will be designated with an IEP, based on a one-unit change in the independent variable. For example, males were 2.016 times more likely to be designated with an IEP than females (See Table 9, row 1).

For each variable, negative beta values and odds ratios under 1 indicate a negative relationship between the independent variables and the outcome. In order to find the impact of these negative beta values as the independent variables increase, it is necessary to take the inverse of the odds ratios (Exp(B)). For example, the *B* coefficient for EL Status is -0.414 and the odds ratio, Exp(B) is 0.661. In order to find the impact of a student being classified as an EL student, it is necessary to take the inverse of 0.661 (calculate 1/0.661), which is 1.512. Therefore, a student classified as an EL student is 1.512 times more likely to be designated with an IEP than a student who is not an EL student. Similarly, the *B* coefficient for Black/African American is -0.458 and the odds ratio, Exp(B) is 0.633. Taking the inverse of the odds ratio (1/0.633) gives a result of 1.580, which means that a student who is Black/African American is 1.580 times more likely to be designated with an IEP than a student who is not Black/African American. These results were critical to answer the four research questions of the study. A summary of all the variables is listed in Table 9 below.

Table 9

Variables in the Equation

Variables	B	S.E.	Wald	Sig.	Exp(B)
Gender	0.701	0.040	313.201	0.000	2.016
Poverty	0.114	0.050	5.128	0.024	1.121
EL Status	-0.414	0.049	72.537	0.000	0.661
Am Ind./AK Nat.	-1.223	0.193	40.306	0.000	0.294
Asian	-0.123	0.085	2.118	0.146	0.884
Pacific Islander	-0.150	0.147	1.048	0.306	0.860
Filipino	-0.073	0.138	0.280	0.597	0.930
Declined to State	18.340	1393.495	0.000	0.989	92238945
Black/African Am.	-0.458	0.057	64.071	0.000	0.633
White	-1.232	0.064	367.104	0.000	0.292
ELA Score	-0.003	0.000	100.647	0.000	0.997
Math Score	-0.008	0.000	708.600	0.000	0.992

Assumptions

The seven assumptions of Binomial Logistic Regression were met and tested for within SPSS. Assumption one of the statistical model was met through the study's one dependent variable that was dichotomous ("IEP" vs. "No IEP"). The second assumption was met through the study's independent variables that were either continuous (SBAC ELA score, and SBAC math score) or nominal (Poverty, Gender, Race/Ethnicity, EL Status). The independence of observations and mutual exclusivity among student placement within the dependent and independent variables fulfilled the third assumption of binomial logistic regression. The fourth assumption was met as all student subgroups contained more than 15 cases. This was met with the smallest subgroup in the study – American Indian/Alaskan Native race/ethnicity – having 189 students.

Assumption five of binomial logistic regression ensures a linear relationship between the continuous independent variables and the logit transformation of the dependent variable. The Box-Tidwell (1962) procedure and the binary logistic procedure within SPSS were used to test

for this assumption (Laerd Statistics, 2015). The sixth assumption was that no multicollinearity existed among the study's variables. SPSS assessed correlation coefficients and Tolerance/VIF values to assure two or more independent variables were not highly correlated with each other (Laerd Statistics, 2015). The final assumption of binomial logistic regression assumes that no significant outliers exist in the sample. To meet this assumption, Casewise diagnostics were used to assure no significant outliers in the data set.

Research Questions

Research Question #1: What is the impact of socioeconomic status, race/ethnicity, and EL status in predicting third through eighth grade student designation with an IEP?

The first research question was designed to explore the impact of these three demographic variables on student designation with an IEP. The *B* coefficient for socioeconomic status (poverty) equaled 0.114 with an odds ratio Exp(B) of 1.121. The odds ratio of 1.121 means that a student with a socioeconomically disadvantaged status (poverty) is 1.121 times more likely to be designated with an IEP than a student who is not socioeconomically disadvantaged (not in poverty). The interpretation of these data is that students who are socioeconomically disadvantaged are about 12% more likely to be designated with an IEP than students who are not socioeconomically disadvantaged.

The impact of race/ethnicity in designation with an IEP was examined for each category of race/ethnicity. Three different race/ethnicities were significant in their impact on student designation with an IEP; American Indian/Alaskan Native, Black/African American, and White. The American Indian/Alaskan Native race/ethnicity had a *B* of -1.223 and the odds ratio, Exp(B) is .294. With the negative *B,* it is necessary to take the inverse of the odds ratio (1/0.294), which gives a result of 3.401. This interpretation of this data is that a student who is American

Indian/Alaskan Native is 3.401 times more likely to be designated with an IEP than a student who is not American Indian/Alaskan Native. The Black/African American race/ethnicity had a *B* of -0.458 and the odds ratio, Exp(B) is 0.633. Taking the inverse of the odds ratio (1/0.633) gives a result of 1.580, which means that is student who is Black/African American is 1.580 times more likely to be designated with an IEP than a student who is not Black/African American. The white race/ethnicity had a *B* of -1.232 and the odds ratio, Exp(B) is 0.232. Taking the inverse of the odds ratio (1/0.232) gives a result of 4.310, which means that is student who is white is 4.310 times more likely to be designated with an IEP than a student who is not white. The interpretation from this information is that students who belong to the three race/ethnicities identified here are much more likely to be designated with an IEP than students who don't belong to those three race/ethnicities.

In looking at the EL status data, EL status has a *B* of -0.414 and the odds ratio, Exp(B) is 0.661. Taking the inverse of the odds ratio (1/0.661) gives a result of 1.512, which means that is student whose EL status is an English learner is 1.512 times more likely to be designated with an IEP than a student who is not an English learner. The interpretation of this data is that students who are English learners are much more likely to be designated with an IEP than students who are not English learners. This could be attributed to the difficulty school staff have in differentiating between students who have a language acquisition problem and students who have a learning disability. Students who have a language acquisition problem can be misidentified to be designated with an IEP when they should only be receiving English language learner support.

Research Question #2: What is the impact of socioeconomic status, race/ethnicity, EL status, and gender in predicting third through eighth grade student designation with an

IEP? The second research question was designed to explore the impact of gender in predicting designation of students with an IEP in addition to socioeconomic status, race/ethnicity, and EL status. From the previous question, it has already been demonstrated that socioeconomically disadvantaged students, American Indian/Native Alaskan students, black/African American students, white students, and students who are English learners are all more likely to be designated with an IEP than students who did not fall into those categories.

Taking into consideration the impact of gender in the designation of students with an IEP, the *B* for gender is .701 and the odds ratio, Exp(B) is 2.016. Because of the way male and female were defined in the model, this means that male students are 2.016 times more likely to be designated with an IEP than female students. The interpretation of this outcome is that male students are more than twice as likely to be designated with an IEP than female students.

Research Question #3: What is the impact of the Smarter Balance Summative Assessment in English language arts, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP? The third research question was designed to explore the impact of the SBAC in English/language arts in predicting designation of students with an IEP in addition to socioeconomic status, race/ethnicity, and EL status. From the first research question, it has already been demonstrated that socioeconomically disadvantaged students, American Indian/Alaskan Native students, black/African American students, white students, and students who are English learners are all more likely to be designated with an IEP than students who did not fall into those categories.

Looking at the impact of the SBAC in English/language arts in designation of students with an IEP, the *B* for the SBAC in English/language arts is -0.003 and the odds ratio, Exp(B) is 0.997. Because the *B* was negative, the inverse must be taken, giving a result of 1.003. The

interpretation of this information is that students' scores on the SBAC in English/language arts have almost no impact on student's likelihood to be designated with an IEP. In other words, the odds are virtually equally likely that a high or low SBAC score will place a student on an IEP.

Research Question #4: What is the impact of the Smarter Balance Summative Assessment in mathematics, socioeconomic status, race/ethnicity, and EL status on predicting third through eighth grade student designation with an IEP? The fourth and last research question was designed to explore the impact of the SBAC in mathematics in predicting designation of students with an IEP in addition to socioeconomic status, race/ethnicity, and EL status. Again, from research question #1, it has already been demonstrated that socioeconomically disadvantaged students, American Indian/Alaskan Native students, black/African American students, white students, and students who are English learners are all more likely to be designated with an IEP than students who did not fall into those categories.

Looking at the impact of the SBAC in mathematics with regards to designation of students with an IEP, the *B* for the SBAC in mathematics is -0.008 and the odds ratio, Exp(B) is 0.992. Taking the inverse of the Exp(B) yields a result of 1.008. Again, the interpretation of this information is that students' scores on the SBAC in mathematics have almost no impact on student's likelihood to be designated with an IEP, similar to the results of the SBAC in English/language arts.

Conclusion

In conclusion, binomial logistic regression was performed to determine the impact of socioeconomic status, race/ethnicity, English language status, gender, SBAC in English/language arts, and SBAC in mathematics in predicting students' designation with an IEP. The model explained between 17% (Cox & Snell R^2) and 32% (Nagelkerke R^2) of the information in the

dependent variable. The model accurately predicts the designation of a student with an IEP 89.3% of the time. Eight of the independent variables/predictors were determined to be statistically significant: socioeconomic status, American Indian/Alaskan Native race/ethnicity, black/African American race/ethnicity, white race/ethnicity, English learner status, gender, the SBAC in English/language arts, and the SBAC in mathematics. Six of the independent variables/predictors were associated with an increased likelihood of students being designated with an IEP: socioeconomic status, American Indian/Alaskan Native race/ethnicity, black/African American race/ethnicity, white race/ethnicity, English learner status, and gender. Two of the independent variables/predictors, while statistically significant, had almost no impact on the likelihood of students being designated with an IEP: the SBAC in English/language arts and the SBAC in mathematics.

In looking at what the data are revealing about the prediction model explored in this research project, there are some important points to consider in the process of designating students with an IEP. The first is that the academic assessments of the SBAC in English/language arts and mathematics had virtually no impact in predicting student designation with an IEP. The IEP placement process, which is supposed to be predominantly based on academic assessments (IDEA, 2004; National Joint Committee on Learning Disabilities, 2010), shows almost no connection of the SBAC to student placement with an IEP. Next, the demographic data of gender showed that males were over twice as likely to be designated with an IEP than females. Finally, students who are English language learners are over 1.5 times more likely to be designated with an IEP compared with students who are not English language learners, yet the race/ethnicities most associated with EL students, Asian and Hispanic/Latino, are not statistically significant at predicting placement of students with an IEP.

Chapter Five

Discussion and Conclusions

The purpose of this research study was to analyze and evaluate the extent to which socioeconomic status, race/ethnicity, English learner (EL) status, gender, the Smarter Balanced Summative Assessment (SBAC) in English/language arts, and the SBAC in mathematics could serve as predictors of students' designation with an Individual Education Plan (IEP) within a large, urban California school district. Developing effective means of predicting students who are at high risk of being designated with an IEP could have many practical applications for the Venti Grande Unified School District and potentially other districts with similar demographics and cultures. Research shows that students who have been designated with an IEP have a lower chance of graduating from high school, a decreased probability of moving on to higher education, and a reduced lifetime earning potential over students who are not designated with IEPs (Chesmore, Ou, & Reynolds, 2016; Ehrhardt, Huntington, Molino, & Barbaresi, 2013; Feng & Sass, 2013). Predictors of students' designation with an IEP could allow the school district to provide early intervention for students academically and behaviorally, potentially reducing the number of students who need to be designated with an IEP. This early intervention academically could be in the form of extra support in small groups during the students' classes, afterschool tutoring, or individual support. The early intervention behaviorally could be in the form of support from staff trained in handling behavioral issues or support from professionals trained in behavioral modification. Another benefit of intervening early to prevent students from being designated with an IEP is a savings for school districts of the additional cost required to serve students with IEPs, which could then be used to provide services to other students within the district (Morgan et al., 2018).

Summary of the Findings

Evidence from this research study suggests that demographic factors may play a more significant role in the IEP placement process for students in the Venti Grande Unified School District than academic achievement assessments in English/language arts and mathematics. In other words, demographics such as gender, EL status, socioeconomic status, and race ethnicity appear to have a greater impact on the designation of students with an IEP than the students' scores on the SBAC in English/language arts and mathematics. The binomial logistic regression model used in this study revealed that gender was a significant predictor of the likelihood of students' designation with an IEP, with an odds ratio, Exp(B), of 2.016 and $p<0.001$. Male students were more than twice as likely to be designated with an IEP than female students. This is profound information, yet it must be interpreted with caution.

Much of the research on student designation with an IEP has focused on race/ethnicity and socioeconomic status (poverty). While some research has been done on the impact of gender on designation of students with an IEP (Coutinho and Oswald 2005; Dever, Raines, Dowdy, & Hostutler, 2016; Stoutjesdijk, Scholte, & Swaab, 2012), it is still an area where more research is required. Statewide data from California supports the odds ratio data for gender. In 2018, 67.4% of California students with IEPs were male compared to 32.6% of students on IEPs being female (California Department of Education, 2019). The literature review provided some support for the connection between gender and designation of students with an IEP (Coutinho and Oswald 2005). Not only do more males have an IEP than females by a two to one margin, but the males in special education spend less time in general education classes than their female special education peers (Stoutjesdijk, Scholte, & Swaab, 2012). To put it another way, not only are twice as many males designated with IEPs than females, but the males also

spend more time in special education classes and less time in general education classes than do females.

The research pertaining to gender has predominantly found a connection between male students and behavior issues. Research has shown that male students are much more likely to receive office disciplinary referrals than female students, to be referred to counselors for behavior issues, and to be suspended or expelled for behavioral problems (Dever, Raines, Dowdy, & Hostutler, 2016). In general, behavior may have a greater impact on determination for a referral for an IEP and special education services than the impact of academics (Hosp & Reschly, 2004; Skiba et al., 2008). Teachers tend to base their decisions on the behavioral and emotional needs of the students rather than using a data-driven approach (Dowdy, Doane, Eklund, & Dever, 2013).

Regarding academic achievement assessments and designation of students with an IEP, this research revealed that the SBAC in English/language arts and mathematics yielded statistically significant results, yet there was virtually no impact of the assessments in predicting student designation with an IEP. The research from this study showed that, for the Venti Grande Unified School District, there is no relation between students' scores on the SBAC Assessments in English/language arts and mathematics and designation of students with an IEP. This is an interesting point since designation of students with an IEP is supposed to be based predominantly on assessment results and not on subjective criteria or especially demographic information (IDEA, 2004; National Joint Committee on Learning Disabilities, 2010).

The processes and procedures for identifying students for special education services are relatively consistent throughout the United States, since special education is a federally mandated program (IDEA, 2018). It is a process which is designed to be an assessment-based

process and not a subjective based process. Once it is recommended the student be assessed for designation with an IEP, a plan is determined for the student to be assessed in the areas of concern expressed by the parent and/or school staff. When the assessments are completed, an IEP meeting is held with the parent and staff members to look at the results of the assessments and determine the eligibility of the student for placement with an IEP. This is where the process may not be purely objective, but a subjective bias may enter the process for student disability areas which involve assessor judgement, such as specific learning disability, emotionally disturbed, and intellectual disability.

If objective academic achievement does not have an impact on students' designation with an IEP, but demographic data has a greater impact on students' designation with an IEP, the process of designation needs to be investigated more closely to determine if it actually is an objective process based on academic achievement information, or if the process is based on other more subjective criteria. One way this could be accomplished is by surveying the staff involved in the recommendation and assessment of student eligibility for designation with an IEP. Research supports that some demographic variables may have impact in the designation of students with an IEP, such as race/ethnicity, gender, poverty, and EL status. The processes and procedures for designating students with an IEP may need to be analyzed more carefully to determine any areas which may bring potential bias. If there is something in the process that needs to be changed to increase its objectivity, then those factors need to be determined to improve the objectivity and decrease the impact of demographic and other judgement factors in the process. One suggestion in improving the process is to consider the culture of the school/region when looking at the IEP designation process (Artilles, 2010). These improvements could increase the sensitivity of the process, improving the assessment practice in correctly

identifying students who should be designated with an IEP and reducing the likelihood of false positives occurring.

English learner status from this research study was found to be statistically significant in this model and from the odds ratio determined for EL status, students who were English learners were over 1.5 times more likely to be designated with an IEP than students who were not English learners. This finding confirms what was found in the literature review. From the literature review, research has shown that disproportional overrepresentation of EL students designated for special education services at grades 3 and higher does exist (Artiles et al., 2005; Fernandez & Inserra, 2013; Samson & Lesaux, 2009). One of the implications of the research is that teachers need to be more thoroughly trained during teacher preparation classes. Also, professional development provided by school districts to language assessment professionals in identifying and discerning the differences between language disabilities and language acquisition issues may need to be improved (Fernandez & Inserra, 2013). Increased attention to training in the differences between language acquisition and language disability in teacher preparation programs and at professional development offered by school districts could help address this issue. In the higher grades especially, disproportional overrepresentation of EL students designated for special education services could be caused by the difficulty educators may have distinguishing between students who have a language disability and students who are working toward language acquisition.

Adding to the difficulty of potential identification issues for EL students is that students who are classified as ELs are typically a non-stable group of students, in part because of the way reclassification changes adjust student cohorts as students move through the grades. As students are reclassified as fluent English proficient (RFEP), they are removed from the cohort of students

classified as ELs. This leaves the students who are having the most difficulty in English language acquisition as the students remaining in the cohort. To help provide consistency in the EL group of students, researchers have begun using an "ever-EL" designation for students. This includes students who are currently EL students as well as students who have been classified as RFEP (Umansky & Thompson, 2017). Applying the ever-EL framework to the research of overrepresentation of EL students in designation with an IEP may enable researchers to see more accurate patterns of EL representation in special education services. However, currently neither the state of California nor the Venti Grande Unified School District uses the "ever-EL" designation in looking at their English learner populations. If California and/or the Venti Grande Unified School District classified the data using the "ever-EL" designation, or something similar to this, research could then be done to see if that would change the impact of EL status in predicting designation of students with an IEP.

This research study, consistent with the research found in the literature, revealed that students who were black/African American were statistically significant in the model for predicting designation of students with an IEP. Based on the odds ratio, students who were black/African American were over 1.5 times more likely to be designated with an IEP than students who were not black/African American. This is not surprising, based on the research data results. However, it is an issue that should be investigated more as it pertains to the policies and procedures in designating students with an IEP. While this research project did not investigate the data to that detail, some research has supported that this overrepresentation of designating black/African American students with IEPs only occurs in disabilities where some judgement is involved in the interpretation of the results of the assessments (Othman, 2018). Representation of non-judgement categories, such as visually impaired, hearing impaired, and traumatic brain

injuries, tends to mirror the proportion of students in the districts' general population. This again points to the need to look at the policies and procedures for designating students with IEPs in areas where judgement is involved.

Students who are American Indian/Native Alaskan where found to be statistically significant in this research model in predicting designation of students with an IEP. Based on the odds ratio from this research study, American Indian/Native Alaskan students were found to be almost 3.5 times more likely to be designated with an IEP than students who were not American Indian/Native Alaskan. Although research by Morgan, Farkas, Hillemeier, and Maczuga (2017) made some mention that this race/ethnicity group could be overrepresented in designation with an IEP, very few studies were found by this researcher directly pertaining to looking at this race/ethnicity subgroup. In the Venti Grande Unified School District, the subgroup of American Indian/Native Alaskan was a very small population compared to other race/ethnicity subgroups. In California and the United States, this also is a comparatively small subgroup, which may have some impact on why the American Indian/Native Alaskan group has not been studied in more specificity.

A somewhat surprising result from this research study was the statistically significant model predictor of the white race/ethnicity subgroup. The white race/ethnicity subgroup had an odds ratio of 0.292, or 3.425 after taking the inverse of 0.292 (1/0.292). This result means that students who are white race/ethnicity in the Venti Grande Unified School District are almost 3.5 times more likely to be designated with an IEP than students who are not white in the District. There was very little research found in the literature review to support this data, although it was mentioned as a potential ramification of the IDEA 2004 federal monitoring of IEP designation by race/ethnicity (Morgan & Farkas, 2013). This may have to do with the fact that the white

race/ethnicity group is a minority population in the Venti Grande Unified School District. One reason for the increased likelihood of white race/ethnicity students to be designated with an IEP could be because many of the white race/ethnicity students are socioeconomically disadvantaged. In the Venti Grande Unified School District, students who are socioeconomically disadvantaged are more likely to be designated with an IEP. Another reason could be because many of the white race/ethnicity students belong to a high socioeconomic status whose parents have higher expectations for their children's performance and are more vocal when their children are not being successful. They demand academic support for their children, which could lead to a higher percentage of students being designated with an IEP. To find more definitive information about this result would require further investigation into the policies and procedures for how students are evaluated for designation with an IEP in the Venti Grande Unified School District. A deeper investigation of the demographic profile of the white race/ethnicity students could also reveal more information as to the increased likelihood of these students being designated with an IEP.

Implications for Policymakers

The process of determining students' eligibility for designation with an IEP is designed to be predominantly based on objective assessment data. Policies and procedures are put in place through federal codes of regulations, state education codes, and local education policies to promote equity in the designation process. Yet, even with this focus on creating an equitable process for designating students with IEPs, there is still overrepresentation of various subgroups of students.

The findings from this study concerning the predictive properties of the demographic variables are consistent with other research cited in the literature review of this study. The process of designating students with an IEP has remained relatively unchanged since the advent

of the IEP process initiated by the Education for All Handicapped Children Act of 1975. Again, it is time to revisit the IEP designation process policies and procedures to evaluate ways to make the process as objective as possible. Policymakers at the state and national level need to examine educational methods to determine if there are practices taking place within the classroom setting which are contributing to the overrepresentation of certain demographic groups. Are there classroom behavior management strategies which are exacerbating the overrepresentation issue? Could a language acquisition/language disability recognition issue be contributing to the problem? These are questions that should be examined based on the data from this research study, since academic achievement assessments do not seem to have an impact on the designation of students with an IEP.

Policymakers need to look at is the preparation and training of school staff. Additional training may be necessary for staff to ascertain the difference between students who may have a language acquisition issue and students who may have a language disability. The inability of staff to be able to differentiate between language acquisition issues and language disability issues can cause students to be designated with an IEP when that is not the support needed by the student. This lack of training could lead to an overrepresentation of EL students designated with an IEP. Staff may need training in differentiating between behavior issues in students, especially male students, and socioemotional issues which detract from students' ability to stay focused academically for extended periods of time. If negative behavior is increasing the likelihood of students being designated with an IEP when there is no disability present, and thus creating an implicit bias in the designation process, this issue would need to be addressed. Change of this nature would require additional research and stakeholder input, but this could provide a good starting point for the conversation and study into the IEP designation process.

Limitations of the Research

There are several important limitations associated with this study. First, a convenience sampling strategy was used to establish a data set for the binomial logistic regression model. As such, the data set was not representative of the California student population. While the study may have practical applications for the Venti Grande Unified School District, the limitations of the study impact both the findings and generalizability of the results. The district is a large, diverse, urban southern California school district with a particular culture and social distinctions that limit the generalizability of the results of the study to districts that have similar demographics and culture. The convenience of the sampling procedure with lack of randomized selection limits external validity.

Another limitation in this study was the result of the Hosmer-Lemeshow Test results. The Hosmer-Lemeshow Test in this study had a p-value less than 5%, which would be interpreted that the model was a poor fit. One interpretation of the result is that the large sample size issue is a potential problem with this goodness of fit test. With large sample sizes, even trivial departures from the model specification are likely to show up as statistically significant. However, the Hosmer-Lemeshow Test is not without its problems. For example, it doesn't take overfitting into account and tends to have low power. There is also very little guidance to selecting the number of subgroups, which can result in large changes in p-values.

The research study was designed to not only look at the impact of each individual independent variable/predictor, but to also look at the cumulative impact of various independent variables/predictors. However, it was unfeasible to look at various combinations and interactions of the independent variables/predictors due to statistical anomalies within certain subgroups.

This inability to look at combinations of variables/predictors and only look at the impact of individual variables/predictors limited the results of this research study.

Suggestions for Future Study

This study focused on the predictive power of various demographic and academic achievement predictors IEP placement. To do this, one large, urban southern California school district's data were used for the study. The generalizability of the study could be increased by using a cross-sectional study of a variety of school districts of various sizes and locations. Despite the loss of local context which might occur for the Venti Grande Unified School District, incorporating other school districts from across the state of California would help to mitigate highly contextualized factors that may have influenced the study's findings. Through incorporating multiple districts, localized factors that may have influenced the study's findings would be less impactful to the overall results.

To address the issues with the Hosmer and Lemeshow Test, a different set of data across various districts may eliminate the subgroup anomalies in such a way that it would improve the fit of the model. Although the Hosmer and Lemeshow Test is useful in showing the potential good fit of the model, it is only one indicator and does not invalidate the results of the study.

Another focus of future study would be to measure the impact of multiple independent predictors instead of studying the effect of only one independent predictor at a time. A different set of data could yield a result which allows the calculations to provide a meaningful inference when looking at the impact of multiple factors at the same time. The ability to investigate the impact of multiple factors could provide richer results which would increase the effectiveness of the prediction model. A more effective predictor model would be beneficial to both the students and the school district in addressing the issue of student designation with an IEP.

A final suggestion for further research to obtain a deeper understanding of the student designation process and the factors that influence or predict designation of a student with an IEP would be to conduct a survey based quantitative study or to do a qualitative study. These types of studies could help researchers gain greater insight into why assessors are designating students with an IEP. Such studies could focus on staff who do the assessments, make recommendations, and are involved with the IEP designation process. It would be important to ask them what they based their decision on when determining eligibility of a student for an IEP. Teachers and parents who made referrals for students to be assessed for IEP eligibility could be interviewed to determine their reasons for referring the student for assessment.

Conclusion

This study found, at least for the Venti Grande Unified School District, that the demographic factors identified in this study as statistically significant had an impact on predicting student designation with an IEP. These findings were consistent with the research from the literature review (Artilies, 2011; Artiles, Kozleski, & Trent, 2010; Blair & Scott, 2002; Fernandez & Inserra, 2013; Perkins, Finegood, & Swain; 2013). The study also found that the academic achievement assessments of the SBAC Assessments in English/language arts and mathematics, while statistically significant, had virtually no impact in predicting student designation with an IEP.

Through the extensive review of IEP designation research, data collection, and statistical analysis, one of the most substantial takeaways was the need for policymakers to revisit the policies and procedures for designating students with an IEP. Is the process biased against certain groups of students? The efforts by federal, state, and local policy decision makers does not seem to support that premise. Sometimes there are factors that impact the IEP designation

process that, while not biased in themselves, ultimately lead to outcomes that are biased against certain student groups. Issues of student behavior, lack of preparation and training of school staff, and student needs not being met in the general education setting from a lack of resources can create a situation that impacts some demographic factors greater than others.

Designation of students with an IEP can have a negative impact on students while attending school and extending well beyond school to the future of the students' life potential. A careful reexamination of the policies and procedures used in the student identification process for an IEP could lead to an improved and more equitable process. University teacher preparation programs and school district training can provide school staff with increased knowledge and methods in addressing behavior issues and language acquisition/language disability differentiation issues. This preparation and training can provide school staff with strategies to address students' behavior issues before the students become deficient academically, which could lead to designation with an IEP. This training can give school staff the knowledge to properly differentiate between students who have language acquisition issues and students who have a language disability. Only the students with a language disability should be considered for designation with an IEP. Early intervention in meeting the students' needs before they reach the point of student designation for an IEP can improve the education experience of the students and help school districts more efficiently manage the limited resources with which they are provided.

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APPENDIX A

IRB REQUEST FORM

Project Information	
Project Title: The Impact of Socioeconomic Status, Race/ethnicity, and English Learner Status in Predicting Third Through Eighth Grade Student Placement on an Individual Education Plan.	Project Number:
Site IRB Number:	Sponsor:
Principal Investigator: John Burch	Organization: Venti Grande Unified School District
Location: Southern California urban school district	Phone: 530-737-3187
Other Investigators: Dr. Dane Joseph	Organization: George Fox University
Location: GFU-Newberg Campus	Phone: 503-554-2855

1. PURPOSE OF THIS RESEARCH STUDY
    - *The purpose of this research is to explore the impact of socioeconomic status, race/ethnicity, and English language status in predicting third through eighth grade student placement on an Individualized Education Plan.*
2. PROCEDURES
    - *This is a quantitative, ex post facto, cross-sectional study using secondary data. Binomial logistic regression will be used to determine the impact of socioeconomic status, race/ethnicity, and EL status to predict the placement of a student on an IEP during their third through eighth-grade year. The student data will be retrieved from the California Department of Education's California Longitudinal Pupil Assessment Data System and analyzed using SPSS.*
3. POSSIBLE RISKS OR DISCOMFORT
    - As this study will be a secondary data analysis after the fact, there is a very low risk for the students whose data will be analyzed.
4. OWNERSHIP AND DOCUMENTATION OF SPECIMENS
    - *Student data will be downloaded from the California Department of Education's California Longitudinal Pupil Assessment Data System and saved as a password protected file on the researcher's password protected computer, saved on a password protected flash drive, and sent via encrypted email to Dr. Joseph.*
5. POSSIBLE BENEFITS
    - The study will benefit the educational field by providing additional insight regarding the impact of socioeconomic status, race/ethnicity, and English Learner status to

predict third through eighth grade student placement on an Individual Education Plan within an urban public-school setting.

6. FINANCIAL CONSIDERATIONS
   - There are no financial benefits or considerations regarding the participants of this study.

7. AVAILABLE TREATMENT ALTERNATIVES
   - Not Applicable

8. AVAILABLE MEDICAL TREATMENT FOR ADVERSE EXPERIENCES
   - Not Applicable

9. CONFIDENTIALITY
   - *This study will not use any specific individual student identifiers. The data will be downloaded and saved as a password protected file on the researcher's password protected laptop, saved on a password protected flash drive, and sent via encrypted email to Dr. Joseph.*

10. TERMINATION OF RESEARCH STUDY
    The student data will be downloaded after completion of the IRB process and will be destroyed per the California Department of Education and district guidelines or after three years, whichever comes first.

11. AVAILABLE SOURCES OF INFORMATION
    - Any further questions you have about this study will be answered by the Principal Investigator:
      Name: John Burch
      Phone Number: 530-737-3187
      Email: jburch15@georgefox.edu
    - Any questions you may have about your rights as a research subject will be answered by:
      Name: Dr. Dane Joseph
      Phone Number: 503-554-2855
      Email: djoseph@georgefox.edu

      Name: Chris Koch, IRB Chair
      Email: ckoch@georgefox.edu
    - In case of a research-related emergency, call: John Burch

      Day Emergency Number: 530-737-3187
      Night Emergency Number: 530-737-3187

12. AUTHORIZATION

I have read and understand this consent form, and grant permission for Central Unified School District student data for the third through eighth-grade classes of the 2017 – 2018 socioeconomic status, race/ethnicity, English Learner status, Smarter Balanced Summative Test Scores, and gender data to be used in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal I further understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws.

Participant Name (Printed or Typed):
Date:

Participant Signature:
Date:

Principal Investigator Signature:
Date:

Signature of Person Obtaining Consent:
Date:

APPENDIX B

IRB APPROVAL FORM

2191115

GEORGE FOX UNIVERSITY HSRC INITIAL REVIEW QUESTIONNAIRE Page 6

Title: The Impact of Socioeconomic Status, Race/ethnicity, and English Learner Status in Predicting Third Through Eighth Grade Student Placement on an Individual Education Plan.

Principal Researcher(s): John Burch

Date application completed: 11/23/19

(The researcher needs to complete the above information on this page)

COMMITTEE FINDING: For Committee Use Only

☑ (1) The proposed research makes adequate provision for safeguarding the health and dignity of the subjects and is therefore approved.

☐ (2) Due to the assessment of risk being questionable or being subject to change, the research must be periodically reviewed by the **HSRC** on a basis throughout the course of the research or until otherwise notified. This requires resubmission of this form, with updated information, for each periodic review.

☐ (3) The proposed research evidences some unnecessary risk to participants and therefore must be revised to remedy the following specific area(s) on non-compliance:

☐ (4) The proposed research contains serious and potentially damaging risks to subjects and is therefore not approved.

CARO _____ 12/4/19

Chair or designated member Date