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The Development of Tracking and Its Historical Impact on Minority Students

Deberae Culpepper
Walden University

Walden University

COLLEGE OF EDUCATION

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Deberae Culpepper-Ofori

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Dr. Sharon Johnson, Committee Chairperson, Education Faculty
Dr. Linda Crawford, Committee Member, Education Faculty
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Chief Academic Officer

Eric Riedel, Ph.D.

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Abstract

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Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In the 1920s, high school students were placed on one of three tracks: high, average, and low. Over the years, vocational education was transformed into a low track assignment for students, often racial minorities, who were perceived as less intelligent. However, the interaction between vocational education and tracking policies and practices remained unclear. Using critical race theory, this study produced an historical analysis of the interaction of these two programs. This included a systematic identification of the originating factors influencing tracking and contemporary tracking policies and practices to understand how tracking affected racial minority students' access to equal educational opportunities in the early 1900s and from 2006 to 2009. Data sources used included archival records that contained tracking data, policy discussions, and policy records; these were used to determine how and why tracking was implemented in one public school district and the impact of the policy itself. Themes were identified using latent and manifest coding procedures including deductive categorization. Results indicated that one unintentional side effect of tracking was the placement of students unfamiliar with traditional White cultures into lower skill student tracks. Further, a comparison of the 1920s and 2006 to 2009 tracking and vocational education programs indicated no adaptations to ameliorate these unintentional side effects. Implications for positive social change include clarifying to policymakers issues in tracking as a means of placement that may result in inappropriate decisions that limit options for minority students.

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Dedication

I dedicate this study to all the conscious teachers who are willing and able to change the quality of education for disadvantaged youths through their own studies. To my husband Ofosu and sons Jason and Xavier, thank you for believing in me.

Acknowledgments

This educational milestone was not crossed by my efforts alone, but with divine intervention from the Father above. I thank my chairperson and committee member, Dr. Ryan and Dr. Johnson for keeping me focused and for being patient. I also thank my husband for letting me disappear when I had a deadline to meet.

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Chapter 1: Introduction

In the early 1900s, the economic downturn ignited the vocational education movement to produce highly skilled workers to compete in the international industrial market. Vocational education was the means for creating an industrial, intelligent workforce that suited the needs of leading manufacturers. At the same time, the challenge of funding vocational education became a platform for politicians, education policymakers, manufacturers, and labor unions. Eventually, state and federal government agencies agreed to legislate the funding; however, in 1883, the Supreme Court had declared the Civil Rights Act of 1875 unconstitutional, allowing Southern states to enact laws to segregate students by race. State policy makers allowed the education for White students to be funded at rates ten times higher than for Black students. The segregative nature of schooling at the time infiltrated the new vocational education system, which resulted in an unequal distribution of funds secured through the Smith-Hughes Act of 1917. Even though the Smith-Hughes Act recommended meeting the needs of all students, racial minority students and White students experienced vastly different educational opportunities (Smith, 1994, p. 5).

At the onset, vocational education increased America's ability to compete in the international industrial market. However, over the course of 20 years, vocational education had transformed into a different type of institute for students of color and low tracked students. Eventually, the low tracks were disproportionately represented by students of color based on perceived ability determined by intelligence tests. Such a transformation is the problem identified in this study. Notwithstanding, gaps can be found

in the literature in reference to the historical and contemporary tracking system in an urban school district on the West Coast. The concept of in-school segregation as it relates to unequal educational opportunities or access for racial minority students has not been addressed for the West Coast. In this study, I identified the origins of tracking through the lens of vocational education and intelligence testing and interpreted them based on historical evidence and contemporary policies and practices.

Problem Statement

The move toward industrialization and education efficiency in the late 1800s and early 1900s produced educational challenges. People gathered at many public forums to interpret community concerns related to the economic depression at the time. The community at large blamed the traditional education structure for addressing the needs of the elite while ignoring the practical, vocational needs of the common man. In the end, federal and state agencies structured and funded vocational education to satisfy the needs of manufacturers and laborers for specialized skills. Many believed that education was the vehicle for a more prosperous society. Many stakeholders desired a functional and equitable educational system that addressed the needs of industry, labor unions, and the working class. As a result of the vocational education movement, from 1900-1937, vocational education was transformed into a low track for low ability students. The problem that I seek to address in this study is to address the historical transformation of vocational education into low track assignment and the policies and practices that aided in disproportionately placing racial minority students into the low track assignments based on perceived ability.

Although vocational education was successful in training highly skilled workers, minority students did not immediately benefit from the training because of the segregative nature of schooling at the time. Eventually, intelligence testing determined which students were tracked into vocational education. By the 1920s, high school students were placed on one of three tracks: high, average, and low. In the 1920s, vocational education students were viewed as low track students. The focus of this study is to investigate the historical components of the vocational education system and its transformation into a system of tracking, especially the policies and practices that disproportionately place racial minority students on the bottom rung of the educational ladder to achievement.

Educational researchers, Oakes (1985, 2005), Kozol (1991, 2005), and Goodlad (1994) studied the educational structure of school districts in Los Angeles and other major cities for many years. Oakes studied tracking for over two decades, surmising that the tradition of education inequality and resistance to detracking schools reveals the nations' cultural attitude about race and educational injustice. Oakes (2005) argued that tracking can no longer be seen as an educational construct that delivers equal educational opportunities to all students. Oakes (1985) used Goodland's (1994) study of schooling as a seminal study that was conducted as a comprehensive investigation of the structure and perception of schools based on school records, protocol, policies, practices, and perceptions of teachers, administrators, parents, and students. Goodlad aimed to find out what happened in and around America's schools so that improvement would be based on the experiences and perceptions of people who were a part of the schooling process. The

information gathered took three years to analyze. As a result of the study, Goodlad indicated that tracking was a matter of great concern. Goodlad concluded that all the schools had a mechanism for tracking students although the mechanisms differed from place to place. Like Goodlad, in this study I analyzed tracking policies and practices to understand current student class assignment procedures. Kozol's narratives described America's schools from 1964-1991. Kozol (2005) argued that apartheid was being restored in America's schools as a result of investigations in approximately 60 schools in 30 districts in 11 different states between 2000 and 2005. Kozol found a gap in funding in these schools and further noted that despite the adoption of policies to abolish funding inequities in California, the funding gap had increased (p. 247).

However, the literature lacks a historical analysis that investigates the origins of tracking as it relates to Los Angeles County Schools in the late 1800s and early 1900s compared to the present educational structure. Geographically, Antelope Valley High School, which is in Lancaster, California, is one of Los Angeles County's school districts. In the literature review, I identified historical policies and procedures implemented in Los Angeles Schools that affect the educational access of racial minority students in Antelope Valley High School.

Purpose of the Study

The purpose of this study is to develop an historical overview of the origins of tracking and the policies and practices that supported it from 1923-1927 compared to 2006-2009 in a school district on the West Coast. An understanding of the origins of tracking and the policies that support tracking will help educational policymakers

understand how and why tracking was developed and how it currently affects racial minority students' educational access. This study contributes to the critical race theory in education that supports the need to detrack public schools for equal educational opportunities for minority students.

Nature of the Study

The nature of this study is to utilize the historical and current educational policies to understand how education continues to provide unequal opportunities for racial minority students. The history of tracking and its effect on unequal educational opportunities explored in this study should in turn aid in the adoption of detracking policies that offer equal educational access and end school segregation (Oakes, 2005). The purpose of this study is to develop an historical overview of the origins of tracking and the policies and practices that supported it from 1923-1927 compared to 2006-2009. I also seek to identify the policies and procedures that determined which students would populate low, average, and advanced tracks. By describing the historical policies and procedures that influenced the tracking system of an urban school district on the West Coast from 1923 to 1927, I extended the body of knowledge in this area. The research answered three questions that focused the data collection and analysis:

1. What is the historical relationship between vocational education and tracking?
2. What policies and practices enforced tracking in the late 1800s and early 1900s?
3. What are contemporary tracking policies and how do they affect tracking practices in 2006-2009?

Theoretical Framework

This historical analysis is supported by critical race theory in education. I investigated unequal educational opportunities through policies. Critical race theorists have investigated aspects of society, institutions, schools, and classrooms to narrate the functions, meanings, causes, and consequences of educational inequalities based on race. Critical race theorists identify ideologies and stereotypical impressions that are imbedded in the educational system (Gay, 2000; Lasdon-Billings, 2006). Ladson-Billings (2006) focused on three dimensions of the critical race theory, surmising that (a) race continues to be significant in the United States, (b) American society is based on property rights rather than human rights, and (c) the intersection of race and property creates an analytical tool for understanding inequities. Critical race theorists continue to highlight oppressive, social, and intellectual myths that lead to lower educational expectations and outcomes for racial minority students (Martin, 2009).

Critical race theory supports the significance of an historical analysis of tracking as it relates to educational access for minority students. I conducted a systematic search of historical data to understand how and why tracking was implemented. I also determined authenticity and credibility of the content, inclusive of a synthesis and

exposition of people and events that influenced educational inequality through tracking. The research problem was investigated through the critical race theory lens, resulting in a narrative of the findings.

Operational Definitions

I used *tracking*, *ability grouping*, and *sorting* in this study as interchangeable terms. *Vocational education*, *industrial education*, and *trade training* are also used interchangeably; the same is true for *traditional education*, *classical education*, and *academic education* as well as *mental* and *intelligence tests*.

Democratic education: Democratic, enriched, advanced, high track, and gifted education are not used interchangeably in this study but possess common elements. Democratic education is purposed learning to create a developmental process, which accompanies people throughout their lifetimes. Such a process promotes the multi-faceted development of one's personality, encourages independence and authenticity, fosters respect to human rights, and increases social and environmental responsibility (The Institute for Democratic Education in America, 2011).

Education reform: The introduction of a better method for the course of learning or instructions that educate. Educational reform also amends defective, vicious, corrupt, or depraved parts of education (*Encarta Dictionary*, 2011).

Intelligence test: I use the terms mental tests and intelligence tests interchangeably in this study. Intelligence tests are functions relating to, found in, or occurring in the mind, for instance, the ability to learn facts and skills and apply them (Binet, 1916).

Tracking: Separating pupils by academic ability into groups. Students are assigned to homogeneous classrooms of high, average, or below average achievement based on standardized testing, teacher or counselor recommendations, or grades. Track placement dictates what students are taught. For instance, academically advanced students study higher mathematics, more foreign languages, and literature, whereas, students in lower track mainly experience low level rote memory or computational drills. Lower track students also learn vocational skills indicated by industry. Students are not usually allowed to take higher track classes once placed in lower tracks, even if the student has demonstrated interest and ability in the subjects taught in higher tracks (Oakes, 2005).

Traditional education: Traditional education uses conventional techniques, formal aspects of art forms such as painting or poetry, or education designed for students who intend to study at a college after high school (Committee of Ten, 1905).

Vocational education: Designed to provide the necessary skills for a specific job or career (Cooley, 1912).

Assumptions

A number of assumptions were part of this research: (a) educational policy makers did not consider the long term effects of sorting students by ability, (b) tracking is an in-school dual system of education, (c) most educators believe tracking students would make their jobs easier, (d) the repercussions of tracking based on intelligence test scores was not viewed for long term effects on racial minority students, (e) the discriminatory nature of intelligence testing was not investigated by researchers in the early 1900s, and

(f) school administrators followed policies and procedures enacted by federal, state, and local educational policymakers.

Limitations

Researcher bias may affect the interpretation of the literature or findings. I am a racial minority who is a product of the Los Angeles School District's educational system and an educator in the Lancaster, California school district. However, I purposefully used self-questioning techniques to overcome identified biases in literature selection and findings. I further questioned my interpretation based on past experiences in the Los Angeles School District and the Eastside School District of Lancaster to narrate fairly and accurately accounts of history that are specifically related to the systemic challenges associated with tracking as opposed to accounts based solely on personal experiences. The possibility always exists that historians may misinterpret historical accounts; however, I cross-referenced major accounts of history for credibility. Also, the California Department of Education's tracking policies are vague and elusive, and each school interprets them differently. Further research is recommended on investigating the seemingly disjointed use of tracking policies in Los Angeles and how common detracking policies will aid the schools in a unified move toward equal educational access.

Scope and Delimitations

The objective of this study is to examine historical tracking policies and practices as they relate to vocational education. In this study, I analyzed the vocational education movement from 1880 to 1940, including the process by which vocational education

became a norm and the manner in which intelligence testing became a sorting tool. The research is focused on the challenges high schools faced with educating immigrants and Blacks as well as an interpretation of how the integration of intelligence testing, along with the school efficiency movement, became the solution to the immigrant and Negro problem in Los Angeles, California in the early 1900s.

The study does not cover vocational education's ability to prepare students for a better life or economic future. This study is limited to the tracking process of Mexicans, other Hispanics, and African-Americans in California and Los Angeles. The study is limited to a 60 year time period. It analyzes predominately studies conducted from 1880-1940. The literature review consists mainly of primary historical documents; however, major contemporary studies on the historical roots of tracking are included.

Significance of the Study

Education is in a state of crisis. Many stakeholders have agreed that the city of Los Angeles's high school tracking system needs restructuring to address the current achievement gap (Oakes, 2005). This study can have a wide-range of impact for multiple areas of school reorganization including equitable educational policies and reorganization of educational structures as well as an integrated school culture. Since the early 1900s, educational innovation has been the subject of interest to leading manufacturers. However, even though multiple changes have taken place over the past 100 years, the Industrial Revolution's influence over course offerings and methods of student track placement continue to perpetuate in-school segregation.

A review of the literature revealed several studies conducted on various school districts in California and some in Los Angeles but a lack of studies conducted on Antelope Valley High School District. Antelope Valley High School District serves several Los Angeles County cities. Antelope Valley is a major suburb of Los Angeles, California, and was part of the Los Angeles School District until the 1940s. Literature regarding Antelope Valley High School District's tracking system was not found. However, historical commission reports identified Antelope Valley High School District as part of Los Angeles School District historically and currently as part of Los Angeles County Schools. The study's significance is its clarification of the origins of tracking; I investigated the influences that perpetuated tracking to understand course options that led to in-school racial segregation. An analysis of the tracking phenomenon can promote comprehensive education reform on the West Coast.

Summary

In this chapter, I introduced the problem and the aim of the study as well as a background of vocational education. Specifically, I previewed the poor economic conditions of the late 1800s and early 1900s and their influence on vocational education. First, I summarized education reform through vocational education from 1880-1930. Second, I investigated the origins of intelligence testing and their influence on tracking students into vocation education and low ability classes from 1880-1930. Third, I briefly discussed the policies and procedures of the school under study between1920 and 1930 that may have led to tracking. I also identified educational policies and procedures that changed the traditional educational program in order to correct the economic situation. I

also included in Chapter 1 the need for the study, the scope and delimitations, the social change nature of the study, the limitations and assumptions, and the conceptual framework related to the background and conditions of the tracking phenomena. A summary of each chapter follows.

Chapter 2 focuses on relevant literature as it relates to vocational education and the system of tracking nationally and locally. I highlight the literature surrounding several education reform studies commissioned by federal, state, and local agencies as well as philosophical and political discussions regarding vocational education. Moreover, I review numerous studies based on their relationship to the origins of intelligence testing integrated with the school efficiency movement. Chapter 2 ends with the policies and procedures that influenced tracking in Los Angeles, California.

Chapter 3 explains the study's historical methodology. Specifically defined is the historical methodology process inclusive of objectives, research design, sources of data analysis, external and internal criticisms, and exposition and synthesis processes. Chapter 3 begins with a description of the logic used to connect the use of historical analysis methodology to the problem statement. I also explain the use of historical methodology as opposed to other methodologies. Moreover, Chapter 3 justifies the procedures and choices for data collection strategies, my role as the researcher in the data collection process, the thematic coding procedures, and Oakes's (1985, 2005) seminal work.

Chapter 4 is a narrative of the findings describing how the data were generated, gathered, and recorded and how I kept track of emerging data. I logically interpreted and

processed the findings to explicate the problem statement and answer the research questions. Chapter 4 highlights thematic patterns and relationships that support the data collected.

Chapter 5 is a summary of the study, including conclusions and recommendations for further research that developed from data garnered from the literature review. It includes an interpretation of the findings and how they relate to the larger body of literature on the subject of tracking. Also, the social change indications and theoretical frameworks are rooted in the recommendations for further studies.

Chapter 2: Literature Review

This chapter outlines the scholarly and professional literature related to the school tracking phenomenon. The literature review consists of four areas that outline the conceptual framework for this study: (a) the origins of vocational education, (b) the transformation of vocational education into a tracked system, (c) the origins of intelligence testing, and (d) the influence of intelligence tests on tracking and vocational education in the nation and in Los Angeles, California in particular. This literature review of historical research contributes to the understanding of the tracking phenomenon, especially in schools in Los Angeles.

To answer the research questions, I examined the historical influences that powered the tracking movement, principally the major policies and practices that led to the system of tracking in Los Angeles's educational system. An investigation of major studies on the vocational education movement, the intelligence test movement, and the tracking movement assists in identifying policies and practices that supported ability grouping. I summarized studies pertinent to the research problem for clarification and identification of future research topics. I chose an historical research methodology because the vocational education movement began in the late 1800s. Primary sources were mainly used for their real-time directness and clarifying nature. The primary sources contain narratives and quantitative studies concerning the overall vocational education movement and its descent into a lower track assignment through the efficiency reform movement. I investigated the dynamics of tracking racial minority students into vocational education or other low tracks in the early 1900s. This investigation revealed

the contemporary effects of ability grouping experienced by racial minority students in Antelope Valley High School.

The most important literature is related to educational reform, educational policies, and educational opportunities of racial minority and poor students in the late 1800s to the early 1900s in the United States. Geographical areas of special focus include school districts in California and Los Angeles. I introduced a synthesis of major theoretical arguments concerning sorting students based on results of intelligence tests by Hall (1905), Terman (1916, 1917, 1922, 1923), Yerkes (1921), and Whipple (1922). Moreover, I analyzed important discussions regarding the segregative nature of vocational education by Cooley (1912), Dewey (1913, 1916), Davenport (1914a, 1914b), and Inglis and Inglis (1918).

Content of the Review

This historical analysis allows a critical look at the past to discover how and why schools tracked students into perceived ability groups. A review of the literature identified themes that formulated belief systems that in turn resulted in tracking policies. Reynolds (2007) determined that historical reports replete with in-depth details of past events reveal wrongs against humanity that can be corrected. As I gathered and examined related historical data, my critical analysis provided insights, assumptions, and meanings of events and practices that shaped the system of tracking in education. I also gathered a systematic accumulation of vocational education and tracking theories and policies that powered school reform in the late 1800s to the early 1900s based on authenticity and relevance. Most historical accounts, inclusive of books, bulletins, board minutes,

government documents, commission reports, organizational reports, graphs, and research documents, were created by original authors. I viewed the nature and scope of tracking through a variety of prisms to identify its origin and its transformation. According to McDowell (2002), historical research methodology is rooted in a process by which history is critically analyzed and synthesized within the historical context.

Organization of the Review

In this chapter, I analyzed five sections of primary source documents, articles, and artifacts that explain the relationships between vocational education and tracking policies. The review begins with an historical perspective of vocational education, providing a background of the people and events that shaped vocational education in the early 1900s as well as the transitions that occurred in vocational education over the years. Insight into the history of vocational education as it relates to tracking can guide education policymakers' actions that will result in future equal educational opportunities.

In each section, I analyze and synthesize vocational education and tracking theories in addition to articles, studies, and historical documents that uncover social, political, and economic themes that have powered school reform and the tracking movement. In the first section, I review literature published by federal and state government organizations, manufacturers, labor unions, educational theorists, and child psychologists who influenced the vocational education movement. In the second section, I review theoretical arguments for and against integrating vocation education into public high school. In the third section, I summarize the implementation of intelligence testing into public schools and its effect on educational policies and practices. In the fourth

section, I analyze the effects of tracking in the state of California and the City of Los Angeles, particularly policies and practices that affect track placement of racial minority students.

Strategies Used for Searching the Literature

The literature in this study mainly includes studies on vocational education and intelligence testing and observations from historical journals on Google Books (books.google.com) and Internet Archive (archive.org). I prepared the review according to the procedures in McDowell's (2002) historical research methodology guide in addition to Oakes's (1985, 2005) seminal historical tracking studies. The development of this framework was mainly garnered from Google Books and Internet Archive. Research publications included the *Los Angeles Education Research Bulletin* (1923-1927), *The National Education Research Bulletin* (1893-1918), The United States Bureau of Education Reports (1893-1914), and *The Psychological Bulletin* (1913) along with other research publications in which primary data could be found. The nature of the review called for primary historical documents which are not available in library databases. I accessed documentation of internal and external events and theories that influenced tracking during 1890-1930 in archival databases. I carried out a thorough search for electronically digitized books, reports, and documents written in 1890-1930. I found a few articles on ERIC, in the Los Angeles County Library, and in the Antelope Valley College Library. To optimize the search related to the research questions, I focused on keywords such as *tracking, ability grouping, vocational education, intelligence testing, minorities and vocational education, minorities and intelligence testing, Los Angeles*

School District and intelligence testing, California and intelligence testing, eugenics and ability, heredity and intelligence, Negroes and vocational education, Colored and vocational education, Mexicans and vocational education, immigrants and vocational education, and *high school reform* throughout the period of 1880-1940.

The Vocational Education Movement

A considerable amount of literature has been published on the vocational education movement in the late 1800s and early 1900s. The integration of vocational education into public education ignited several theoretical arguments and major studies commissioned by the United States Government, leading manufacturers, and labor unions (Commissioner on Education, 1910, 1914; Commission on Industrial and Technical Education, 1906, 1914; Commission on National Aid to Vocational Education, 1914). The commission studies concurred on four educational concerns: (a) the changing nature of work, (b) the ability of traditional schools to provide the future workforce with the knowledge and skills needed for national industrial economic growth, (c) sources of funding, and (d) integrated or separate vocational education facilities. The commissions' organized public forums attended by manufacturers, laborers, unions, social science scholars, and the community. The Commission on National Aid to Vocational Education (1914) extended its participant pool by including state, city, and county superintendents of public schools (p. 11).

In the early 1900s, a large body of literature reflected cross-country analytical findings garnered from citizen surveys on the topic of vocational education: the National Society for the Promotion of Industrial Education (1906), the United States Bureau of

Education (1910, 1914), the Bureau of Labor Statistics (1917), and school authorities. The United States Department of the Interior (1916) and the Vocational Education Survey of Minneapolis (1917) were nationally referenced studies that investigated local industries. Two structural needs for efficient vocational education were determined: what kind of instruction is needed and the best way of imparting that instruction for the nation's interest and significance (United States Department of the Interior, 1916, p. 47; Vocational Education Survey of Minneapolis, 1917, p. 14). Notwithstanding, the Bureau of Statistics (1917) surveyed vocational education graduates to determine their economic success.

Economics and Vocational Education

In the late 1800s and early 1900s, as part of education reform, a large number of studies were published on the disadvantages and advantages of integrating vocational into traditional schooling. The question of separate or integrated vocational education into public schools ignited efficiency debates. Public surveys and investigations into the cost and the structure of vocational schools conducted by Commission on Industrial and Technical Education (1906), Massachusetts Commission on Industrial and Technical Education (1906), Commission on National Aid to Vocational Education (1914), and Snedden (1980) indicated that vocational and traditional schooling should be separate. However, the commissions' cost analysis suggested the infeasibility of a privately funded vocational program. The Massachusetts Commission on Industrial and Technical Education (1906) conducted a mixed method study to reveal existing vocational school conditions and to identify vocational education outcomes based on attendee surveys (p.

178). The Massachusetts Commission (1906) identified a need for vocational curriculum in elementary schools (Bureau of Labor, 1910; Report on the Commission on Industrial and Technical Education, 1906, p. 23). The Massachusetts Commission (1906) indicated that their data concurred with the National Society for the Promotion of Industrial Education's (1906) findings that state and local government should fund separate vocational schools (Massachusetts Commission, 1906, p. 22).

Dutton and Snedden's (1908) study on the organization and administration of education was referenced to aid in the expansion of public education statistics (cited by Department of Education, 1910, p. 13). The National Society for the Promotion of Industrial Education consulted Snedden (1908) regarding the structure of vocational education and ways to make it more efficient. Snedden's (1908) efficiency theory was sought by the states to ensure that grant money was spent wisely (Report of the Commission to National Aid, 1914, p. 270). Subsequently, I discuss Snedden's (1908) California school studies. However, the National Society for the Promotion of Industrial Education's (1907) study identified an unclear relationship between spending on education and economic development. The National Society for the Promotion of Industrial Education reported that vocational education systems needed social support to thrive.

Vocational Education Supported by Legislation

Many political figures endorsed vocational education. Several state and federal agents including presidents supported the vocational education movement. I will provide an in-depth interpretation of their influence in Chapter 4. The Douglas Commission

appointed on June 7, 1905 by Massachusetts Governor William L. Douglas was one of the first studies to investigate the subject of industrial and technical education to establish vocational schools in Massachusetts with local support (The Report of the Commission on Industrial Education, 1906, 1907). Based on the Douglas Commission's recommendations, *The Act of 1906* was enacted (Report of the Commission on Industrial Education, 1907, p. 7). Another political advocate for vocational education funding was Senator Hoke Smith, chairman of the National Society for the Promotion of Industrial Education. Smith appointed a special commission that studied the need for government funded industrial education. Several historical and contemporary studies identified the Smith-Hughes Act of 1917 as the financial source that empowered the vocational education movement. In Chapter 4, I will interpret and analyze further such influences.

Vocational education researchers Irvins (1917) and Patty (1919) traced the origins of the Smith-Hughes Act 1917. Irvins (1917), a historical researcher, published a chronological account of vocational education, analyzed vocational education government funding, and traced vocational education bills rejected by Congress. Government funding agendas inclusive of the bills presented and rejected by Congress resulted in the Smith-Hughes Act of 1917 after ten years. Patty's (1919) cross-country comparative analysis revealed several inconsistencies in regard to Smith-Hughes Act guidelines. In short, Patty (1919) revealed racially discriminatory practices in regard to who benefited from the Smith-Hughes funds. Negro vocational schools were particularly underfunded compared to White schools, and Negro teachers were paid on average

$1,000 less than White vocational education teachers. I discuss the intentions and the realities of the Smith-Hughes Act in Chapter 4.

Vocational Education and Segregation

Over a span of 30 years, literature revealing the relationship between vocational education and unequal education opportunities was widely published by Eliot (1892, 1905), Hall (1905), the National Society for the Study of Education (1907), Davenport (1914), Dewey (1916), and Cremin (1990). In 1882, Eliot, Chairman of the Committee of Ten and President of Harvard University, had studied high schools across the United States. Eliot (1882) identified three fundamental principles of democratic education: (a) standardized curriculum for all students, (b) all subjects taught equally well should have equal educative value, and (c) subjects fitted for colleges are fitted for life (p. 94). However, Hall (1883), a leading child psychologist who investigated children's mental intelligence, opposed Eliot's (1892) outcomes. Hall's (1905) published work, *Adolescence*, revealed that many students' interview responses indicated that traditional education was boring and was forced on students who would never enter college (p. 511). Hall's (1905) research identified a strong relationship between student failure and disconnect from traditional education. Hall (1905) was referenced in major studies by the Commission on Industrial and Technical Education (1906), the Massachusetts Commission on Industrial and Technical Education (1906), and the Commission on National Aid to Vocational Education (1914). Hall's (1905) anti-standardized educational theory was based on the fact that certain communities wanted and needed more practical forms of education to aid job placement (Commission on Industrial and Technical

Education, 1906; Commission on National Aid to Vocational Education, 1914; Massachusetts Commission on Industrial and Technical Education, 1906). Furthermore, many commissioned reports indicated that certain communities did not believe traditional education could prepare a skilled workforce needed for the industrial era (Commission on Industrial and Technical Education, 1906; Commission on National Aid to Vocational Education, 1914; Massachusetts Commission on Industrial and Technical Education, 1906).

To determine the effects of a separate vocational education on student ability to complete college entrance requirements, several major studies took place under the National Society for the Study of Education (1907). These organizations compared their findings to the Committee of Ten's Report on the construct of traditional education. Moreover, the studies of Eliot (1905), the National Society for the Study of Education (1907), and Davenport (1914) highlighted the effects of teaching courses differently depending on the student's future goals. In particular, Eliot's (1905) and Davenport's (1914) studies revealed the negative effects associated with a separate system of education. Davenport argued that a vocational curriculum would segregate students along vocational lines (p. 131). Eliot's cross-country comparative analysis of high school curriculum requirements and college entrance requirements reported that no matter the student's future goals, all subjects should be taught the same way (p. 308). However, Hall (1905) denounced Eliot's conclusion and labeled his theory an "extraordinary fallacy" (p. 510).

Education theorists continued to publish volumes of literature on the integration of vocational education into traditional education (e.g., Commission of Reorganization of Secondary Education, 1918; Cubberley, 1912; Dewey, 1913, 1916; Eliot, 1905; National Education Association of the United States, 1916; Snedden, 1912), theorizing that students benefit most when traditional education is integrated into efficient vocational education. Dewey's (1916) theory was supported by Cremin (1990), president of Teacher's College. Based on the outcomes of historical studies, Cremin's analysis found Dewey's version of a democratic education to be corrupted. Cremin revealed that education reformers were incorporating only parts of Dewey's curriculum recommendations instead of his entire vision. Eliot (1905) Cubberley (1912), and Cremin (1990) concurred on one point: improved instruction through modification and enriched content equates to education reform. However, their views diverged on the subject of ability grouping. Cubberley's (1912) outcomes supported ability groups, whereas Eliot (1905) and Cremin (1990) argued for enriched curriculum for all students. Sears's (1931) historical study identified that the stratification of educational opportunities for different types of individuals had gained ground in the traditional education argument (p. vi). However, Hall's (1905) child psychology study was cited in the *Educational Research Bulletin* as being diametrically opposed to enriched curriculum for all students (as cited in the Board of Education of the City of Los Angeles, 1912). Hall's findings indicated that borderline pupils who hovered between normal and feebleminded or slow learners need special curricula or differentiated courses of study (p. 4).

Community advocates and education experts began to investigate the vocation educational movement in the early 1900s. Cubberley (1912), Snedden (1912), and Weeks (1912) highlighted problems associated with vocational education. Cubberley (1912) identified rural schools' neglect and school trustees' inability to organize and manage rural education properly (p. 7), as well as the benefits of manual training, household science, and domestic arts for the rural community (p. 5). In a critique of vocational education, Weeks (1912) referenced Booker T. Washington's (1903a, 1903b) theory on the subject of Negroes and industrial education. Both Weeks's and Washington's studies mentioned the impractical function of traditional education on the advancement of Negroes in the industrial revolution era. Similarly, Weeks revealed that immigrant children were guided into occupations to preserve Americanization.

The turn of the century literature published by child psychologists identified race or heredity as a problem in traditional schools. In preliminary work, Hall's (1883) comparative statistical studies significantly added to the child psychology and education literature. Hall concluded that "the Aryan race entered school with more developed organs that connected vision with knowledge" (p. 25). Hall's participants were selected from various geographical locations and various ethnic groups. Hall's participant pool included immigrants, Aryans, and Negros from various states. Moreover, Hall's Kansas City study participant demographics included a total of 678 children; 47 were colored (Black or African American). In other work, Hall tested Boston's White, Black, and immigrant elementary children's knowledge of things and concepts traditionally found in the rural areas. The relationship between country life and vocation has been widely

investigated by agricultural vocation advocates (Cubberley, 1912; Hall, 1983; National Society for the Promotion of Industrial Education, 1907). Hall concluded that city life was unnatural and city children entered school less intelligent than country children (p. 28). Hall's study concurred with Cubberley's (1912) theory that "improved instruction is equivalent to country life curriculum as an economic need" (p. 5). Du Bois (1903, p. 107) and Eliot (1905) concurred that Negroes needed the best teachers in order to train for vocational skills.

Moreover, in the early 1900s, numerous researchers attempted to explain the relationship among traditional education, industrial education, and the Negro. Washington (1903a) and Du Bois (1903), in their studies, analyzed Negros with a college education. Both Washington (1903a) and Du Bois (1903) concurred that entirely traditional education left the Negro with the ability to speak Latin but no way to profit from a skilled trade. Washington (1903a, 1903b) and Hall (1905) advocated practical, domestic, and agricultural training for Negroes. Hall's (1905) study of Negro intelligence concluded that the "Negro's education should be practical, domestic, agricultural, chiefly if not entirely industrial…. no provisions for even a few exceptional Negroes" (p. 675). Still, Washington (1903a, 1903b), principal of the Tuskegee Institute, an industrial trade school, concurred with Hall's (1905) theory that Negroes needed practical, domestic, and agricultural education. However, Washington's (1903a) main argument determined that industrial education integrated with traditional education would be best suited for the Negro. Washington (1903a) concurred with Dewey (1916) and the National Education

Association's (NEA) (1918) *Cardinal Principles of Education* theories of an integrated vocational and traditional educational system.

Washington (1903b, p. 19), Du Bois (1903, p. 58), Snedden (1912), and Sears (1931, p. 39) concluded that a balance between traditional and industrial education would be best to promote and sustain a progressive Negro race. Snedden (1912) concurred with Du Bois (1903) and Washington (1903a, 1903b) that both liberal and vocational education is needed for the Negro as a result of impaired family relationships or nonexistent family relationships and that the curriculum should be taught in a practical and effective manner (Snedden, 1912, pp. 12-13). Sears's (1931) historical analysis indicated that Negroes, inmates, and juvenile delinquents could be reformed or trained to be community leaders through vocational education (p. 139). Regarding the effects of industrial schools on the Negro, the United States Department of Education (1915) conducted a statistical survey on education for Negroes and immigrants, specifically on their preparation for life, citizenship, and adjustment to industrial conditions. The U.S. Department of Education (1915) studied 21,000 schools, 50 of which were Negro high schools. School officers answered questionnaires and were interviewed. Their observations revealed a lack of funding and opportunities for Negro schools in contrast to White schools (U. S. Department of Education, 1915). The Commission on National Aid to Vocational Education (1914) reported that the high cost of racially segregated schools delayed the development of vocational education and in turn deprived the state of intelligent skilled laborers (p. 139).

Traditional Versus Vocational Education

In the early 1900s, a considerable amount of literature was published on the advantages and disadvantages of a separate vocational education system (Cooley 1914, 1912; Douglas Commission, 1905; National Society for the Promotion of Industrial Education, 1917; Report of the Commission on Industrial Education, 1906, 1907; Report of the Commission of Industrial and Vocational Education, 1906, 1914). Several longitudinal studies investigated the relationship between vocational education locally and abroad, inclusive of the United States Bureau of Labor (1910), United States Bureau of Education (1910, 1914), National Association of Manufacturers (1910), Kershensteiner (1911), and Cooley (1912). The Commercial Club of Chicago commissioned Edwin G. Cooley, former superintendent of Chicago Schools, to investigate the vocational schools of Europe and to devote special attention to the German system (Cooley, 1912, 1914). Cooley's (1912) yearlong study mentioned a few schools that were of interest to the American vocational system supporters. Cooley's study was referenced by the National Society for the Promotion of Industrial Education (NSPIE) in 1911. After 30 years of investigating vocational education, the National Association of Manufacturers (1910) concluded that cultural education equally balanced with industrial education could be implemented better through separate industrial schools (p. 402). Both Kershensteiner (1911) and Cooley (1912) concurred that vocational education should be conjoined with culture, character, and civics training.

The United States Bureau of Labor (1910), Kershensteiner (1911), and Cooley (1912) published reports regarding manual, industrial and technical education in Europe.

Specifically Cooley, Kershensteiner, and the National Association of Manufactures (1910) determined that the European model of vocational education was far more efficient than the American model but too expensive for the United States to replicate. Cooley and Kershensteiner highlighted the funding needs of vocational education and student age ranges for vocational education. Other studies carried out by the National Society for the Promotion of Industrial Education (1907, 1913), Kerschensteiner (1911), Cooley (1912, 1914), and the Commission of Reorganization of Secondary Education (1918) concurred with Kerschensteiner's (1911) and Cooley's (1912) age range determinations, indicating that secondary education should meet the needs of students approximately 12-18 years of age. Moreover, Kerschensteiner (1911), an expert of industrial education in Germany, investigated American industrial schools and advised the National Society for the Promotion of Industrial Education to adopt two principles: (a) trade schools should absolutely abandon all college preparation, (b) all instruction in mathematics and science should be directly related to the trade, and (c) technical, business, and civic training should be offered (Cooley, 1912, 1914; Kerschensteiner, 1911, p. 48). Kerschensteiner (1911) and Cooley (1912) conducted seminal studies based on Germany's vocational education model.

Contrary to Kerschensteiner's (1911) and Cooley's (1912) recommendations, leading education theorists such as Dewey (1913), Davenport (1914a, 1914b) and Inglis (1918) concurred that incorrect integration of vocational schools into secondary public schools would result in an undemocratic educational system segregated by social class. Inglis and Inglis's (1918) theory revealed that separate vocational and traditional

programs would segregate students along vocational lines. Several theorists advocated for a balanced integration of traditional and vocational education as the best option for high school students (Dewey, 1916; Du Bois, 1903, Inglis & Inglis, 1918; Washington, 1903). On the contrary, several theorists published literature that identified the factors associated with undemocratic education, particularly tracking, which had been identified as the major contributing factors to class separation according to Dewey (1913), Davenport (1914a; 1914b), and Inglis and Inglis (1918). Moreover, Dewey (1916) and Inglis and Inglis (1918) urged educational authorities to provide both forms of education in traditional public schools. In 1913, Dewey published "An Undemocratic Proposal in Public Education," an article that cautioned against separating student by vocational lines.

Dewey (1913), Inglis (1918), and Sears (1931) questioned the manner in which vocational education was integrated into secondary public schools. Dewey (1913) and Davenport (1914a) predicted that vocational education apart from traditional education would mark off a segment of pupils for industrial manufacturers (p. 365). Moreover, Sears (1931) traced the historical process by which the factory system of education was integrated into course instruction. Although Dewey's (1913) and Davenport's (1914a) conclusions correlated on several points, they held opposing views regarding the integration of vocational and traditional schooling. Davenport's (1914a) theory indicated that vocational and traditional schools should be separate to avoid distractions (p. 131), whereas Dewey surmised that the integration of the two would create a democratic institution (p. 366). Both Cooley (1912), ex-superintendent of Chicago, and Dewey

(1913) highlighted the divisive nature of separate vocational education; moreover, they opposed the implementation of vocational education for the advancement of industry or manufacturers along with others (Cooley, 1912, p. 367; Davenport, 1914a; Dewey, 1913, p. 367). Cooley's (1912) study was referenced in several government commissioned reports such as the Report on the Commission of Industrial and Vocational Education (1906, 1914). Cooley's (1912) analysis attempted to draw a fine distinction between European vocational education and the American vocational education system. Cooley's analysis also explained how vocational education affected society and the economy.

High School Education Reform or Vocations

Historians have revealed educational history factors to help guide school reform, particularly Hall (1905) and Cubberley (1909). Cubberley conducted an analysis of the growing educational institution. Cubberley's study traced historical education policies, organizational formations of schools, and education violations in order to rightly interpret educational historical facts (pp. v-vi). Hall theorized that educational history can reveal current educational problems through a historical lens of past educational practices that show the fundamental nature of current educational problems and experiences.

A considerable amount of literature has been published on the inclusion of vocational education in traditional education reform in the early 1900s including Dewey (1916), the Commission on Reconstruction of Secondary Education (CRSE) (1918), and Oakes (1985, 2006), whose seminal historical studies revealed the phenomena of tracking to further identify educational reform needs. These reports were founded on the precept that education history can guide and inform educational reform. These researchers

concurred that secondary school reform was difficult because educational institutes are conservative and deeply rooted in tradition (CRSE, 1918, p. 7; Dewey, 1916, p. 189; Oakes, 1985, 2005). The CRSE (1918) explained educational reform needs to take place as problems arise, not as an unscrutinized reaction to a problem (p. 7), for unprepared reorganization leads to confusion and misunderstanding of others' motives. Moreover, Dewey (1916) revealed the opposing relationship between the true democratic educational system and old social conditions. Both Davenport (1914) and Dewey (1916) agreed on two education reform challenges: (a) social stratifications would result in a dual system of vocational schools and (b) the dual system of education would become an undemocratic educational process. Davenport (1914b) highlighted specific measures that vocational and general education institutions should consider before separating students along vocational lines. Davenport wrote "to segregate any class of people from the common mass and to educate it by itself and solely with reference of its own affairs, is to make it more narrow and bigoted generation by generation" (p. 105).

In 1911, the NEA appointed the Commission on the Reorganization of Secondary Education (CRSE). The committee's purpose was to investigate secondary education to create a curriculum guideline that would aid in the reformation of secondary high school into a comprehensive program (p. 9). The CRSE (1911) study used the Committee of Ten (1893) as a seminal study. Both studies investigated high school subjects and curriculum for consistency. However, the CRSE extended the focus by integrating vocational education and other subjects into the high school curriculum (CSRE, 1918, p. 5). The CRSE defined curriculum as "a systematic arrangement of subjects, and courses of those

subjects, both required and elective, extending through two or more years and designed for a group of pupils who common aims and probable careers may properly differentiate a considerable part of their work from that of other groups in the school" (p. 18). In short, curriculum required and elected should be organized systematically based on student career goals for a portion of the time students are in school. The study resulted in a booklet that addressed the democratic and social need for comprehensive high school entitled, *The Seven Cardinal Principles of Comprehensive High School* (CSRE, 1918).

In particular, The United States Bureau of Education commissioned the CRSE (1918) to construct Report No. 19, an explicit guideline for vocational education in secondary schools (p. 4). The CRSE defined education in a democracy as "both within and without the school should develop in each individual the knowledge, interest, ideal, habits, and power whereby he will find his place and use in that place to shape both himself and society toward ever nobler ends" (p. 9). A major study by the CRSE sponsored by the NEA was in concurrence with the educational philosophies and vocational education theories of Du Bois (1903), Washington (1903), Davenport (1914a), Dewey (1916), and Inglis and Inglis (1918), which resulted in the development of seven principles of education: health, command of fundamental processes, worthy home membership, vocation, civic education, worthy use of leisure, and ethical character (p. 3). Moreover, the Committee of Ten's report highlighted several important outcomes associated with vocational education and traditional schools: (a) vocation should equip an individual to maintain his household, good relationships, and contribute to society; (b) students should investigate the world around them and make best decision regarding

vocation and look at their own capabilities and aptitude; (c) vocation should contribute to the community and teach good relationships with different vocational groups; employer and employee relationships; and producer and consumer relationships (NEA, 1918). On the subject of expert committees, the CRSE (1918) and Bobbitt (1923) used high school subject expert committees of teachers and administrators as participants to identify best practices.

A detailed examination of school reorganization by the CRSE (1918) and Bobbitt (1923) produced curriculum reform recommendations. Bobbitt examined Los Angeles City schools. Like the CRSE, Bobbitt started with a committee of 25 members who were considered high school subject specialists, and ended up with a total of 300 committee members (pp. 1-2). Bobbitt's outcomes supported vocational training in place of traditional education in Los Angeles schools, whereas the CRSE recommended more attention and enriching courses for superior students.

In 1982, the National Education Association (NEA) in conjunction with the National Council of Education (NCE) published literature that identified an incoherent national high school system (Committee of Ten School Studies, 1893, pp. ii-ii; CSRE, 1918). Over a period of 12 years, the Committee of Ten studied secondary school curriculum and (a) highlighted the need for uniformity in secondary school programs and (b) the requirements for college entrance (Baker, 1891; Committee of Ten School Studies 1893; Eliot, 1905). Preceding the NEA and NCE investigation through the Committee of Ten, Baker (1891) conducted a preliminary study about the nation's fragmented high school system, which guided the Committee of Ten's study.

Baker was president of the University of Colorado and a former principal of a Denver, Colorado high school (Committee of Ten Secondary School Studies, 1893). While the Commissioner of Education (1910) reexamined the educational programs to ensure they were keeping pace with the nations' growth and changes (p. 1), Baker was conducting a major quantitative investigation of high school subject requirements. Baker's (1891) and the Report of the Commissioner of Education (1910) found that the United States lacked a coherent national school system (Committee of Ten Secondary School Studies, 1893, p. ii; Report of the Commissioner of Education, 1910, p. 1). Moreover, national inconsistencies in high school were the central focus in Baker's (1891) study, specifically, high school subject requirements, curriculum, and time spent on each subject. Baker concluded that unclear college entrance requirements caused many high school students to fall short of college opportunities (as cited in Mitchell, 2004). Baker identified thousands of students who failed to qualify for college or the universities due to unclear high school to college requirements (Committee of Ten Secondary Schools Studies, 1893, p. ii).

Baker's (1891) preliminary survey was sent to 300 high schools regarding subjects taught and instructional assignments; forty schools responded, one of which was in California. The preliminary survey identified three high school alignment challenges: (a) about 40 subjects were taught overall, of which 13 were consistent in a few schools, (b) the subjects were taught in short periods, resulting in limited knowledge, and (c) time allotted to each subject varied widely in each school. Based on these findings, the

Committee of Ten's goal was to align high school subjects to create standardized high school course taking (Committee of Ten Report, 1894).

In addition to the Committee of Ten adoption of Baker's (1891) findings, the National Council of Education organized a conference on high school uniformity (Committee of Ten School Studies 1893, p. 3), and appointed Charles W. Eliot, President of Harvard University, Chairman of the Committee of Ten (Committee of Ten Main Report, 1894). The Committee of Ten's High School Studies (1893) procured nine conferences that cooperatively created guidelines to unify numerous high school subjects: Latin, Greek, English, and other modern languages; mathematics, physics, astronomy, and chemistry; natural history including biology, botany, zoology, and physiology; history, civic government and economic economy; and geography which included physical geography, geology, and meteorology (pp. 8-11). In addition, the study further clarified national high school curriculum guidelines such as (a) proper limits of each subject, (b) best method of instructions, (c) proper allotment of time on each subject, and (d) best assessment methods to determine college readiness (Report of the Committee of Ten on Secondary School Studies with the Reports of Conferences Arranged by Committee, 1894, p. 3; as cited in Mitchell, 2004). The conference method of inquiry allotted credibility to the Committee of Ten's findings (Eliot, 1905, p. 326). Still, the Sixth Yearbook of the National Society for the Scientific Study of Education (1907) agreed that the Committee of Ten's study on secondary school was the most valuable single study of secondary schools currently in existence (p. 7). Their Delphi study identified limitations associated with vocational school students' abilities to pass college

entrance exams and the need for vocational subject recognition by colleges and universities (Sixth Yearbook of the National Society for the Scientific Study of Education, 1907).

School Efficiency and Scientific Reform Movement

Alfred Binet (1905), a child psychologist in Europe, developed a scale to measure the mental capacity of retarded children. The Binet scale was not created to measure the intelligence of normal children (p. 9). Binet (1905) wrote, "The scale properly speaking does not permit the measure of the intelligence because intellectual qualities are not superimposable, and therefore cannot be measured as linear surfaces are measured, but are on the contrary, a classification, a hierarchy among diverse intelligence, and for the necessities of practice" (p. 40). In short, the Education Ministry in Europe required retarded children's abilities be measured for accurate placement into special education programs.

Robert Yerkes (1921) collaborated with Terman, Thorndike, Whipple, Hall, and others to develop the Alpha Army Test (pp. 8, 31). These psychologists' connections to eugenics and hereditarianism are discussed in Chapter 4. Yerkes's (1921) revision of Lewis Terman's Stanford-Binet test resulted in the Alpha Army Test. The outcomes of Hall (1905), Terman (1916, 1917, 1923), Yerkes (1921), Thorndike (1922), and Whipple (1922) determined that intelligence can be measured linearly. Yerkes' (1921) linear investigation consisted of a psychological survey of 400 men in a cross country examination. The men were tested in groups of 25-50. Yerkes's observations resulted in the development of four intelligence tests for army recruits: (a) individual examinations

for illiterates or English learners, (b) a test for those who exhibit psychopathic conditions, (c) a test for the intellectually subnormal or inferior, and (d) a test for the distinctly supernormal.

Both Yerkes (1912) and Lawrence (1922) used race as dependent variables in their studies. Moreover, Yerkes's (1921) intelligence tests revealed gaps between mental ages of Whites and Black in general, and Whites and Blacks in Alabama and Illinois. Yerkes found the average mental age of a White man was 13.08 years; for a Negro it was 10.41 years. Yerkes' investigation also determined that 89% of all Blacks who took the test should be classified as morons (p. 791). Yerkes found that Negroes made up 25% of prisoners. The Negro prisoners' tested mental age was higher than foreign born prisoners, but lower than White prisoners (p. 15). According to Lawrence (1922), the Italians' score came as a surprise because Negro prisoners were identified as more intelligent than Italian prisoners. Italians were considered the most promising race amongst United States immigrants (Lawrence, 1922, p. 33). Lawrence used a further modified Army Alpha Test to measure the children of Utah's intelligence. Fifteen thousand children were tested excluding Salt Lake City's population. According to Lawrence, 5% were found in the failing group, and 1.11% was identified as subnormal. Most of the failing children were from foreign born parents who worked in the mines.

Moreover, Bobbitt (1922), Lawrence (1922), Board of Education in the City of Los Angeles (1923), and Agee, Edmundson, McCoy, Purnell, Rose, and Picrson (1926) investigated the relationship between intelligence tests and vocational education. Lawrence concluded that modification of the Alpha Army Test should be used for

measuring the rate of individual adaptation for vocational purposes (p. 11). Moreover, Lawrence listed three determinants of vocation: (a) heredity, (b) constitutional make-up, and (c) behavior. Lawrence concluded that intelligence tests should measure immigrant intellect to determine their ability and economic value to the United States (pp. 24-25). Foreign born intelligence test discrepancies are discussed later on in the review. Inconsistency in the norm group's demographics and intelligence test outcomes based on race is discussed in a subsequent section and in Chapter 4.

Several studies highlighted the relationship among high school scientific methods (Bobbitt, 1922; Cubberley, 1909; Inglis & Inglis, 1918). Cubberley (1909) conducted an historical analysis of education. Cubberley traced the policies that influenced educational reform. Cubberley surmised that educational reform was mainly driven by reactionary or radical means. In his longitudinal historical analysis, Cubberley concluded that states, schools, and vocational programs must be purposefully structured and supported by education history. Specifically, Cubberley discussed two actions that influence education reform negatively: (a) returning to previous systems of education and (b) adherence to supposed experts recommendations without question (p. vii).

Inglis and Inglis (1918) conducted a systematic analysis of factors that influenced educational reform. Their constructive theory of secondary education highlighted three factors that should always determine the form of secondary education: (a) the nature of the pupils to be educated, (b) the character of the social organization of the social ideas, and (c) the means and materials available for educational purposes (p. v). Although their focus appeared social, Inglis and Inglis suggested that students were "raw material,"

which is popular terminology in the industrial efficiency theory. Also, Snedden's (1913) case study analysis highlighted the need for scientific methods in secondary education to support student success (p. vi).

In 1923, The Board of Education City of Los Angeles created an education research department headed by Bobbitt. Bobbitt appointed a committee of 200 members which consisted of superintendents, administrators, teachers, and child psychologists. The committee's overall goal was to address the problems of secondary education through scientific research methodologies (Board of Education of Los Angeles, 1923, pp. 3-4). Their slogan was "research to improve instruction." Pressey and Pressey's (1914) *Introduction to the Use of Standard Tests,* and Bobbitt's (1922) *Curriculum-making in Los Angeles* study were adopted by the education research committee in Los Angeles city schools. Based on Bobbitt's' (1914) recommendations, the education research committee developed a tracking system based on intelligence test results (p. 4). In opposition to tracking, Eliot's (1905) study claimed that enriched curriculum for all students would solve problems in secondary education. Moreover, Sears (1931) explained how measurement tests historically guided students into work life decisions.

The benefits of ability groups were investigated by the Education Research Committee in Los Angeles City Schools (1922-1923), the National Council of Education (1923) and Agee, Edmundson, Mccoy, Purnell, Rose, and Picrson (1926). The Board of Education for the City of Los Angeles (1922b) highlighted the advantages of grouping students based on mental ability: (a) some pupils learn five to seven times more rapidly than others, (b) bright pupils do not learn lazy habits while waiting for slower pupils, (c)

slow pupils do not skip fundamentals trying to keep up, and (d) curriculum and instruction can be adapted and varied to individual differences (p. 2). Moreover, the National Research Council survey (as cited in the Board of Education, 1923) identified an approval rate of 100% for classifying students by intelligence in certain populations. The National Research Council (1923) concluded, "It is important to determine mental capacity to remove conditions of discouragement with minimal, mean, and maximum ability" (p. 6). Moreover, Agee et al. (1926) concluded that track placement should be chiefly based on test scores. Agee et al. also supported identification of students not working up to capacity, and those needing enriched programs (p. 3).

Scientific Reorganizations and Intelligence Tests

Several studies investigated the linear measurement of intelligence in the early 1900s. The Binet (1916) intelligence study was used as a seminal study by leading child psychologists Pressey and Pressey (1914), Terman (1916; 1917; 1922; 1923; 1931), Pinter (1917), Goddard (1920), McCall (1922), and Thorndike (1922). Henry Goddard translated the Binet scale into English, renaming it the Binet-Simon Scale. Although Goddard launched the Binet-Simon Scale in America, Lewis Terman revised the scale to measure the intelligence of normal children and named it the Stanford-Binet Scale (Terman, 1917). Terman (1916) published findings related to the Stanford-Binet Scale and minority children's intelligence. Controversy regarding the demographics of the norm group was debated when the Stanford-Binet Scale was used to measure the intelligence of minority children. The Binet scale norm groups were children of middle class, Western European descent (Terman, 1917, p. 29). Terman (1916) found that out of

the 1,000 children studied, “dullness seems to be racial” (p. 92). Terman’s (1917) tested population was approximately 80-120 children ages 6 through 14.

Child psychologists Hall (1893; 1905), Cubberley (1912; 1915), and Terman (1922) concluded that random intelligence tests of school children evidenced mental differences. As a result of these mental differences, Hall (1883; 1905), Cubberley (1912; 1915), and Terman (1922) concurred that schools should classify students based on mental differences and frame curriculum and instruction based on their abilities. Moreover, Terman urged schools to guide students into vocational or traditional education (p. 3). However, McCall (1922) referenced Thorndike’s (1922) statement: “We cannot measure general intelligence. General intelligence is composed of three intelligences, namely, abstract intelligence, social intelligence, and mechanical intelligence (p. 173). Pressey and Pressey (1914), Pintner (1917a), and McCall (1922) published literature on how to use intelligence tests. However, McCall (1922) referenced Thorndike’s and Terman’s test in his monograph publication of intelligence tests.

Alice Strong (1913), a school teacher, conducted a preliminary comparative analysis using the Binet scale. Strong found 25.2% of White children tested below age, 42.9% tested at age, and 28.6% tested above age, compared to 60.85% of colored children who scored below age, 30% at age, and 9.2% per cent above age. The White students’ results concurred with Goddard’s (1911) findings which found that 120 colored children were 5 years below age, one 4 years below age, and eight 3 years below age, 27 were 2 years below age, 36 were 1 year below age, and four irregular, which totaled 77; however, 39 colored students scores were not mentioned in the article. On another note,

child psychologists Rudolph Pintner and Pressey and Pressey developed an intelligence scale by investigating community social norms (Pintner, 1917a; Pressey & Pressey, 1914). Pintner (1917a) also created a performance based intelligence test.

Pressey and Pressey (1914) experienced two problems while they attempted to study East Indian children to place in special classes: (a) the measurement tool did not run parallel with a sociological study of the community and (b) challenges of reliability and significance were encountered. Pintner (1917b) and Whipple (1922) also developed intelligence surveys. In an investigation, Pintner (1922b) developed a culturally relevant intelligence measuring tool by integrating cultural norms as a dependent variable. Pintner started with a preliminary survey of 2,500 children to establish the norm group. Next, 154 children were tested in a community of 913 citizens. The survey revealed (a) a decreasing population of Native Americans, (b) lack of reading in the home, (c) poor recreation facilities, (d) poor business spirits, (e) high school graduates tending to leave the village, (f) two-thirds owning their own home, (g) one-fifth owning an automobile, and (h) a remarkably low death rate.

Pintner (1917a) referred to Binet (1916) as a genius for his standardized group intelligence characteristic tests. Binet's (1917) surmised in a critique of intelligence testing that attention and adaptation were major identifiable factors that can be related to intelligence. Binet's view was supported by Pintner (1917a; 1917b) who investigated group tests that uncovered major psychological characteristics. On the contrary, Pinter (1917a) opposed Terman's (1917) use of the Binet scale measurement scale because the norm group used did not represent the culture of the children in subsequent studies. Pinter

(1917a), along with critics of the intelligence tests, questioned the norm groups used by Binet and Terman (1917).

Because the intelligence of immigrants was being investigated, several researchers developed performance tests that measured native or innate endowment (Covin, 1922, p. 11; Pintner 1917a, p. 10; Whipple, 1922, p. vii). Colvin (1922) determined that intelligence was a native endowment similar to Hall (1905), Terman (1917), Yerkes (1921), Thorndike (1922), and Whipple (1922). Colvin's (1922) intelligence measurement study identified three concerns: (a) an intelligence test may grow out of bounds because it may be understood in theory but it may be harmfully applied in practice, (b) intelligence can only be accurately measured in similar environments, and (c) the stratification of intelligence is native ability. Colvin concluded that intelligence itself is not inborn but only the capacity to become intelligent (p. 11). Moreover, an historical study by Sears (1931) highlighted the testing movement in American education. Sears's (1931) historical analysis emphasized the Binet scale, Simon-Binet Scale, and Stanford-Binet Scale. Sears investigated verbal tests that gauged student ability to enter college. Sears concluded that the tests were questionable and their only use was to help administrators sort students out. Specifically, Sears indicated that standardized and school tests were successful in (a) making definite the aims of education and determining the possibility, for individuals of varying levels, of attaining those aims; (b) furthering the detailed analysis of the process of learning; (c) aiding individual diagnosis and group analysis, and (d) improving classification and promotion through educational and vocational guidance (p. 184).

In 1923, The Board of Education for the City of Los Angeles conducted major studies in Los Angeles Schools. The research topics included equal ability groups, problem solving methods, high school research problems, educational and vocational guidance, and principles of curriculum construction (Board of Education for the City of Los Angeles, 1923). The education research department used intelligence tests created by Terman; McCall; Pressey and Pressey; and Thorndike along with several other intelligence tests (Board of Education for the City of Los Angeles, 1923). The research committee headed by Franklin Bobbitt, curriculum consultant to Los Angeles public schools, conducted numerous comparative analysis studies which included independent variables such as race, age, and mental abilities (Board of Education for the City of Los Angeles, 1923). Terman's (1931) California public school study investigated students' (a) individual differences and their causes (b) mental development, and (c) instinctive tendencies. Terman indicated that intrinsic tendencies as they relate to education are purposed to make human behavior different from what it would be without education (p. 95).

Intelligence Testing in Education Movement

Several education historians have attempted to explain the origins of school reform and how they affect contemporary student outcomes: Sears (1931), Goodlad (1981), Oakes (1985, 2005), Cremin (1990), and Kozol (1991, 2005). As stated previously, Oakes' (1985, 2005) *Keep Tracking: How Schools Structure Inequity* studies are used as seminal studies for this research. Oakes traced how tracking has changed and endured over the past century. In a major historical analysis, Oakes noted disadvantages

suffered by students in lower tracks from 1985-1995 (p. ix), using Goodlad's (1981) research on schooling as a seminal study. Both researchers conducted in depth cross-country inquiries into how different types of schools in different ethnic communities functioned, and how they were organized. As a result of Goodlad's 1981 study (as cited in Oakes, 2005), tracking became a matter of high interest. Goodard (1981) identified tracking in all 38 schools studied. In the seminal study, Oakes (2005) investigated 25 schools; overall, the school followed vague undocumented tracking policies with the exception of two schools.

Similar to Goodlad (1981) and Oakes (2005), Kozol (1991) investigated various school districts across the nation. In a major study, Kozol developed a narrative of inquiries across the nation from 1964 to 1991, identifying funding discrepancies among California school districts from 1974-1977 and interpreting the manner in which unequal funding affected educational outcomes for minority and poor students in California (pp. 220-222). Moreover, Kozol's (2005) cross country narrative of schools highlighted California's Board of Education actions; school conditions and demographics; funding challenges; scripted curriculum; segregation in Los Angeles schools; standardized testing; and the Williams Lawsuit (pp. 169-387). Cremin (1990), an education historian, talked about the history of education as it related to tracking in a video documentary titled *Popularity of Education and its Discontents.* Similar to Eliot (1905), Cremin supported enriched education for all students devoid of tracking. Moreover, Cremin supported vocational education as a means to engage students who become disengaged through a strict traditional education system.

In a study of the historical roots of vocational education, Sears (1931) highlighted four topics: (a) the origins of trade, (b) industry as it relates to education, (c) legislation, and (d) social progress. The purpose of Sears's study was to identify the origins of vocational education and to discover the roots of organized and controlled trade and industrial education. Sears noted that the purpose of the study was to inform teachers of the social basis upon which vocational education rests. Sears concluded that changes in education were rooted in industrial life and scientific thought, and measurement tests will eventually guide students into work life decisions (Sears 1931, p. v).

Davis (1922) investigated the use of intelligence tests in the classification of pupils in the public schools of Jackson, Michigan, purposefully excluding foreign student participation in the survey. Seven thousand kindergarten through high school students participated in a National Intelligence Test group survey. The National Intelligence Test was also a revision of the Binet scale by Termen. The intelligence test was administered to groups of 2,500 students, after which the Binet test was administered for reliability to sort students into special education classes (Davis, 1922).

Thorndike (1922) argued that quantitative measurement with a combination of standardized psychological and educational theories should replace the current grading scheme that was mainly teacher opinion. Thorndike highlighted three criticisms of this theory: (a) learning should be for the sake of the learners; too much emphasis on marks, prizes, or degrees would create an learning environment of marks rather than real achievement; (b) teachers' time should be devoted to making achievement rather than measuring how great they are; and (c) scientific measurements applied to human affairs,

the family, the state, education, and religion would deface the beauty of life and corrode its nobility into sordid materialism (pp. 1-4). Thorndike added, "These fears were groundless, whether intelligence is measured or not it still exists" (p. 4).

Pressey and Pressey (1914), Pintner (1917), Colvin (1922), and Holmes (1922) argued that a valid mental test is based on common experiences and interests. Pressey and Pressey and Pintner focused on community based tests with which Colvin furthered his research by highlighting that (a) mental tests are possible when based on elements involving the common experiences of the tested, (b) the Binet and subsequent tests were given on the assumption that all normal children should have learned the things with which they have a common acquaintance, (c) scores obtained in typical intelligence tests are conditioned in part on knowledge of English, and (d) in order to secure valid results, the administration and scoring of tests must be uniform (pp. 19-24). More importantly, Colvin argued that tests must be devised to suit the group, and they must be constructed based on those groups' interests and cultural familiarities (p. 24). Holmes's article warned against blindly applying tests to track gifted students into special classes and referenced Hall's (1905) and Dewey's (1916) vocational education theories. Dewy argued that a vocational guidance movement should be a progressive discovery of the kind of person one wants to be (p. 119).

Schmitt (1927) explained the function of the psychological clinic in schools in an analysis, devising a process of intervention with family and schools to assist in addressing the child's behavioral maladjustments (p. 11). As another strategy, McCall (1922) argued that intelligence tests enable teachers to keep together pupils with like

educational ages, as well as social and vocational needs (p. 56). Mc Call (1911) referenced Eliot's (as cited in Mc Call, 1922) theory that the function of vocational education should be to guide a student's life career motives (p. 169).

Vocational Education Movement in California

Various commission reports noted California's participation in the vocational education movement. Several studies that investigated the relationship between vocational education and tracking were carried out in various parts of California. Quantitative outcomes regarding California's vocational education program was published by Patty (1910) who carried out a cross-country comparative analysis which referenced Edwin R. Snyder, California's Commissioner of Vocational Education. Snyder was concerned about California's agricultural vocational education programs (as cited in Patty, 1910, p. 95). Moreover, the Report on the Commission on Industrial and Technical Education (1906) indicated that San Francisco, California public schools were the most practical of them all (p. 65). In other words, California was one of the most successful states to integrate vocational education and traditional education.

The California School of Mechanics Art surveyed former students to identify their success in the work force. Sixty-five surveys indicated extremely high journeyman's wages, and 44 out of 65 had worked as draftsmen while attending college. The California School of Mechanical Arts course catalogue had listed a model that committees could reference when constructing vocational schools (Commission on Industrial and Technical Education, 1906, p. 66). This catalogue indicated that 75 percent of student time was devoted to technical instruction and 25 percent to supplemental instruction as would be

mandated by the Smith-Hughes Act of 1917. The California School of Mechanical Arts suggested that all students take (a) a brief course in political economy, (b) commercial geography, (c) history and government, and (d) different instruction in science and mathematics in different apprentice courses (Commission on Industrial and Technical Education, 1906, p. 68). The California School of Mechanical Arts model was also adopted by Antelope Valley High School (Antelope Valley High School Board Minutes, 1930, 1940, 1950, 1960). Moreover, Cubberley (1915) conducted a two-week survey on the conditions and needs of the public school system in Oakland, California. Cubberley identified traditional forms of instruction which only met the needs of the intellectual class. Hall's (1905) and Cubberley's (1915) studies reveal the benefits of different curricula based on ability or interest (p. 168; p. 169).

Moreover, the Commission Report on Industrial and Vocational Education (1914) organized by the California State Board of Education conducted several statistical surveys. Snyder (1914) researched the condition of manual, domestic, and vocational arts in the public schools of California including Antelope Valley Union High School in Lancaster, California (as cited in California State Board of Education, 1914). Snyder analyzed general educational situations to reveal the efficiency of California's school system (as cited in California State Board of Education, 1914). According to Snyder, California schools needed to adopt more efficient policies and procedures for addressing the various needs of children in three areas: (a) those who possessed different mental and physical traits, (b) those who possessed different capabilities within these traits, and (c) those with different financial situations (Report on Industrial and Vocational Education,

California, p. 5). Snyder (1914) referenced the Seven Cardinal Principles of Education (1915) along with John Dewey's (1906) education and democracy theoretical approach.

The State Board of California (1914) analyzed the Seven Cardinal Principles of Education and encouraged high school teachers as vocational counselors to consider each pupil an efficient worker and good citizen who should pursue the vocation best suited for his or her ability. Similar to Kerschensteiner (1911) and Cooley (1912), the California State Board of Education (1914) concluded that character training should be a part of a well balanced vocational program because failure is usually based on character as opposed to training (pp. 23-24). American studies of the European vocational education system influenced policies and procedures in California in the early 1900s. The Commission on National Aid to Vocational Education chaired by Smith (1914) investigated the financial needs for vocational education and the federal government's responsibilities. The commissions' findings validated the formation of the Smith-Hughes Act in 1917, and the commission began to fund vocational education in conjunction with the states. Antelope Valley High School did access funds through the Smith-Hughes Act (Antelope Valley High School Board Minutes, 1930, 1940, 1950, 1960).

The department of education at the University of California in Berkeley (1920) researched justifiable outcomes for federal and state vocational education funding. The University of California at Berkeley and Snyder (as cited in the California State Board of Education, 1914) concurred that sorting students based on intelligence test results was a solution to the problems in California high schools. Therefore, a comparative analysis was conducted highlighting teacher instructional problems that resulted in explaining the

process of scientific investigation to teachers in Berkeley, California. The study also included an explanation of the use of intelligence tests to resolve instructional problems in the classroom (University of California, Berkeley, 1920). Snyder had also outlined policies and practices that elucidated California's use of intelligence testing (as cited in the California State Board of Education, 1914).

California and Intelligence Testing

Foundational intelligence testing for education reform was adopted by California Schools. Researchers such as Terman, Dickson, and Cubberley, leading child psychologists, promoted the use of intelligence testing in California. For a period of 10 years, Terman carried out numerous studies to determine the relationships between intelligence and race. Terman's (1916) quantitative study determined that intelligence is static. Terman indicated that student test scores between 80 and 90 were considered dull/normal, using the Stanford-Binet scale to measure children's intelligence in California, particularly Mexican, Indian, and Negro children, all of whom scored far below the average intelligence of Western European middle class children. However, children of European descent in California tested comparably higher (Terman, 1916). Terman concluded that Negro boys would never progress over the mental age of 12, which correlates with his findings in the 1922 Army Alpha Test studies. The Alpha Army Test trial was discussed in a previous section.

Moreover, in 1911, Stanford University professors collected data on children who made exceptionally high scores on a mental test. In 1913-1914, three schools in San Francisco were selected for identification of gifted students. In 1915, data were published

on 31 children who tested above the 125 intelligence quotient. Terman (1926) cross checked the outcomes correlating short summaries submitted by the child's teacher. In 1916, Terman had required parents and teachers to submit a more in-depth review of the child's abilities (Terman, 1926, p. 3) and 59 children with I.Q.s over 140 were identified. Terman's (1915) study was used as a seminal study for his 1916 I.Q. study. Terman (1916) further revised his previous study by including an interest bank from the child's perspective (p. 4).

Terman's (1926) publication of his overall findings indicated (a) a high incidence of intellectual superiority in boys compared to girls, (b) gifted children having better physical growth and health than the control group children, (c) gifted children accelerating about 1 1/2 years above the control group but being placed in groups 2 years lower than they were in mental age, (d) a small number being pushed into development by parents, (e) heredity being superior because 50% of the fathers belonged to professional groups but not one from the unskilled groups, (f) no evidence existing that gifted children lacked in school adaptability or leadership, (g) gifted children being less superior in social, emotional, psychological, and physical traits than in intellectual and vocational traits (pp. 3-4).

Dickson (1923), director of the Bureau of Research and Guidance in the Oakland California experiment, administered intelligence tests to 30,000 students and concluded that 90% of the students' academic failure was based on mental inferiority. Thereby, adoption of the mental testing policy in Oakland, California schools was approved. The adoption of intelligence testing resulted in the classification of students into

homogeneous groups. The grouping also allowed Oakland schools to increase class sizes at a lower cost (pp. 32-34). A more in-depth analysis of tracking and economics is discussed in Chapter 4.

Los Angeles and Intelligence Testing

The Education Research Bulletin published studies that identified the rationale for tracking policies and practices adopted by Los Angeles City Schools. The major contributor was the Los Angeles City School Research Department. Literature from Los Angeles City Schools was directly related to policies and practices at Antelope Valley High School because they were the same district historically. However, contemporary tracking literature only highlights Los Angeles School district, of which Antelope Valley High School is no longer a part. In Chapter 4, historical tracking policies and practices are discussed in order to understand how tracking policies and practices may still segregate students by race in contemporary Antelope Valley High School classrooms.

The vocational education, tracking, and intelligence testing policies and procedures explored in this Los Angeles City School historical literature review applies to Antelope Valley High School District because Antelope Valley High School District was a part of the Los Angeles School District until the early 1940s. For that reason, a review of the literature on the origins of the vocational education movement's transformation into tracking through the intelligence testing vehicle in Los Angeles, California is identified in previous and subsequent sections of this literature review. However, a gap in the literature that focuses on the continued use of tracking that perpetuated school racial segregation in Los Angeles City schools in the early 1900s

compared to school racial segregation in the Antelope Valley School District in 2010 is investigated to add to the critical race theory in the body of literature related to education. A more in-depth discussion of the findings is analyzed in Chapter 4.

Numerous studies that focused on the efficiency of Los Angeles City School's tracking policies and practices were carried out by Jessup and Shiels (1910), California Board of Education (1914), Cubberley (1915), the Los Angeles Board of Education Advisory Committee (1916), Jessup and Shiels (1918), and the Board of Education of the City of Los Angeles (1923; 1924; 1925; 1926; 1927). However, the California School Board Association (CSBA) (2007, 2009) recommended tracking policy adoption by California school districts. Jessup and Shiels (1910) were commissioned by the Board of Education and the Department of Education to conduct an expert comprehensive examination of Los Angeles Schools. The researchers explained that a two week survey was inefficient and that a more complete survey would take a longer period of time and also take more than two researchers to do the work (Los Angeles Board of Education Advisory Committee, 1916, pp. 11-12). Jessup and Shiels pointed out that the Cleveland School survey had not been completed and had taken 18 months thus far, with 50 people doing the research (p. 12). Data were garnered from interviews with administrators, teachers, including qualitative reports on schools, and class sessions (Jessup & Shiels, 1910, p. 13). The researchers visited 12 Los Angeles high schools, nine intermediate schools, thirteen elementary schools, including evening elementary and evening high schools (p. 13). Jessup and Shiels reported an increase in size due to a rising student population that contributed to high school problems. Specifically, Jessup and Shiels

identified an increase in the native and foreign born populations inclusive of Native American, English, Irish, Scottish, and Mexican students. The population increased from 60,583 to 118,650 between 1910 and 1915 (Jessup and Shiels, 1910, p. 19).

Shiels (1916), Bobbitt (1922), Terman (1922), Sutherland (1923), and Raferty (1985), published a large amount of literature on the relationships of intelligence testing and track placement in Los Angeles Schools. Bobbitt's (1922) study of Los Angeles School curriculum suggested curriculum revisions based on mental abilities measured by intelligence testing. Bobbitt's (1922) study highlighted the advantages of ability grouped students. Sutherland's (1923) study in Los Angeles separated students in classrooms based on perceived ability identified by mental tests (p. 62). Sutherland identified some limitations of the intelligence tests. In a quantitative study, Sutherland determined intelligence tests did not accurately measure intelligence, surmising that intelligence testing should be used to identify and support particular children who need help. In another study, Sutherland used mental tests on juvenile delinquents in Los Angeles school district. Binet (1916) and Sutherland (1923) concurred that intelligence tests should be used to aid in meeting the needs of individual misfits, but resulted in methods of individual instruction for the general population (p. 7). On the contrary, Terman's (1922) findings indicated that the intelligence test was successful at identifying extent and frequency of individual differences of random school children, and those differences should be taken into account when framing curricula and instructional methods. Terman (1922) also determined that intelligence tests can be used to classify children for instruction and vocational guidance (p. 5).

Raftery's (1985) historical analysis explained how intelligence quotient testing became a tool for one of the nation's most advanced and progressive school systems: Los Angeles Public Schools between 1922 and 1932. Raftery examined the controversy initiated by I.Q. tests, identifying several social concerns regarding intelligence testing in the early 1900s. Intellectuals criticized the test for (a) its hereditary biases, (b) the validity of measuring intelligence, (c) its perpetuation of inequality through social control, and (d) intelligence testing outcomes that shifted from democratic liberal traditional education. Teachers, administrators, and counselors were accused of using intelligence tests to separate students by race (p. 1). Literature regarding the relationships between intelligence testing and race is reviewed in a subsequent section. Specifically, Raftery's longitudinal case study included a timeline of 10 years in which primary source data were compiled from the department of psychology, educational research bulletins of the Los Angeles City Schools, teachers' and principals' school journals, and the minutes of the Los Angeles Board of Education.

Several researchers carried out longitudinal studies on the validity of intelligence tests, and they found opposing outcomes, specifically Terman (1923; 1926), Nettles (1926), and Raftery (1985). In the winters of 1923 and 1926, Terman carried out a longitudinal study on the consistency of the Intelligence Quotient Test at John Muir Junior High School in Los Angeles, California. At the same time, Nettles, a school counselor, conducted a longitudinal quantitative study that compared the correlating coefficients of Terman's 1923 and 1926 group tests. Nettles found Terman's intelligence tests unreliable.

Minorities and Intelligence Testing in Los Angeles, California

What is known about vocational education in relationship to intelligence tests and minorities is largely based on empirical studies commissioned by the Board of Education for the City of Los Angeles (1923-1927). Literature regarding intelligence testing and minorities in Los Angeles was published by Sheils (1915), Board of Los Angeles City Schools (1922-1927), Clark (1922), Lawrence (1922), Bobbitt (1923), Gamble (1923), Terman (1923), and Kindel (1925). The board of education consulted with education researchers, the Los Angeles schools' education research committee, teachers, and administrators to clarify how intelligence testing would be used.

Gamble (1923) and Terman (1923) carried out comparative analyses. In a seminal study, Terman compared the intelligence of Mexicans and various types of Indians using the National Intelligence Test and the Terman Group Test. Terman's findings indicate that out of 22 Mexican native born children from middle class backgrounds, the average score was 78.75 on the intelligence tests. Terman compared the average of 78.75 to the average score of 100.25 for the entire school. Terman also compared Mexican native born children's scores to the average score of Mexican children who were placed in special education, which was 73.00 (p. 10), indicating that the general population of Mexican children was closer to the special education population than the general population. Gamble (1923), principal of the Palm School in Los Angles, conducted a comparative analysis between Mexican children and their White counterparts. Gamble also tested Mexican children' intelligence by using the National Intelligence Test and the Terman Group Test at the start of the school year; later he used the Woody-McCall

mixed fundamental's arithmetic test, the 60-word test from Ayer's Spelling list, and the Thorndike-McCall reading test (p. 22). Gamble's test population. Similar to Terman (1923), Gamble included middle class Mexican native born children who mainly spoke English. Gamble's findings were vastly different from Terman's. Gamble concluded, overall, that Mexican children's achievement score placed them in the superior range on the intelligence quotient scale (p. 9).

Several studies revealed various relationships between intelligence tests and race inclusive of Clark (1922) and Kendal (1925). For instance, in 1925, Kendal, principal of Lemona School in Van Nuys, California tested predominately Mexican children in math and English language arts. Kendel's pre and post test results indicated that Mexican children scored below the district norm in academics and 2 1/2 years below the average age norm on the National Intelligence Test. However, on the post test, after intervention in language arts and math, the students scored above school norms in spelling and above school norms in math 7 months later (Kendal, 1925). Their chronological age range was higher and their National Intelligence scores rose from -.77 below the norm to +.23, though they were still below the norms. Based on his finding, Kendal recommended Mexican student placement in learning environments with English speakers for even more gains in academics and intelligence (Volume 6, 3, p. 15). On the contrary, Bobbitt (1923) recommended that Mexican children be grouped by ability and that they should develop both languages for vocational positions demanding fluent bilingual employees.

Furthermore, Clark used counselors to carry out a preliminary National Intelligence Test on 500 Negro children in Los Angeles Schools between 1922 and 1923.

The children were classified as follows: the 2.4 % who scored above 140 points were identified as very superior, 35.3% scored 110-139 in the superior range, 43.9% scored 90-109, and average-normal I.Q., and 15.7% scored 70-89 and were identified as feeble-minded (Clark, 1922). The median score for all children regardless of race was 104.7 (Clark, 1922). Lawrence (1922) tested 150 delinquent boys in Whittier, California where 28% were identified as feeble-minded and 25% as borderline (p. 15). The Los Angeles Education Research Bulletin listed six advantages of testing: (a) to make comparisons to fellow teachers and national standards possible, (b) to grade objectively, (c) to get quantitative feedback regarding curriculum and instruction, (d) to identify teaching outcomes of student academic weaknesses, and (e) to allow teachers to guide students intelligently toward educational opportunities (Board of Education Los Angeles City Schools, 1922b, p. 1)

Intelligence Testing in Various States

Heim (1925) studied first grade children's intelligence to clarify group intelligence testing in that grade. Heim used the Detroit First Grade Intelligence Test (Form A) at Belvedere School. Heim's study asked four questions: (a) Are intelligence tests reliable as a mental test for grouping in the first grade? (b) Is it advisable to test more than 10 or 12 first graders at a time? (c) Would tests in Spanish result in a more comparable mental ability in first grade Mexican children? (d) Can primary teachers use analytical and diagnostic value of such tests sufficiently to make their use valuable in classroom teaching instead of merely an administrative device for grading? Heim found that tests are high indicators of mental ability and can be well used in grading or grouping

by grade ability, mental age, and intellectual ability. Moreover, Tupper (1923) Superintendent of Schools in Miami, Arizona, tested 1,500 students with the Binet and National Intelligence tests. Fifty percent of the participants were Mexican. Tupper (1923) found an excessive retardation rate in Mexican children. These findings resulted in ability grouping for children second through eighth grade to save money with larger class sizes of homogenous groups (Tupper, 1923, p. 93).

Heredity

Leading child psychology experts Hall (1905), Yerkes (1921), Whipple (1922), and Terman (1926) published literature relating intelligence to heredity. Board of Education of the City of Los Angeles (1923-1927) Freeman (1927), and Woodley (1927) investigated hereditary factors that might cause a child to fail in school. Woodley (1927), a child psychologist for Los Angeles City Schools, studied children's heredity in relation to experience. Woodley highlighted procedures to understand student's failures in school, concluding that school failure could be related to experience as opposed to heredity. Woodley (1927) outlined diagnostic procedures that should be considered when determining a child's educational failure: (a) the mental level of the child, (b) academic and attendance history, (c) the child's health, (d) the mental tone and attitude of the child, and (e) identifying the heredity of a child (pp. 15-16). Freeman (1927) agreed with Woodley that intelligence tests measure native intelligence of a child (pp. 2-3). However, Freeman did not agree that intelligence was static, similar to Terman's, Yerkes's, Hall's, and Thorndike's findings. Freeman pointed out that by improving curriculum and

instruction methods, and by extending the time students spent in school, their intelligence could increase, and they could pass the intelligence test (p. 4).

Moreover, Bailey (1917) (as cited in Board of Education City of Los Angeles, 1923) and Goddard (1911) (as cited in Board of Education of Los Angeles, 1923) agreed that intelligence was based on heredity. Bailey (as cited in Board of Education City of Los Angeles, 1923) published an article that analyzed the school grading system and what was actually being graded. The article revealed three qualities of the grading system (i.e.,, capacity, potential, ability), as well as the concept that nature is beyond the control of education. Bailey (as cited in Board of Education of Los Angeles, 1923) concluded that "heredity; ability is the general power 'to do.' It is the result of action, maturity, general experience, and directed training on the individual's performance of specific achievements" (pp. 4-6). Goddard (1911) surveyed parents of children admitted to the New Jersey Vineland institution for the feeble-minded. In his study, Goddard (1911) surveyed 300 parents in an attempt to trace feeble-mindedness. Goddard concluded that feeble-mindedness was caused by hereditary in about two-thirds of the parents surveyed.

Notwithstanding, the Board of Education for the City of Los Angeles' education research department published literature on the process of measuring degrees of intelligence. The research pointed out several educational problems that high school intelligence tests could resolve: (a) predicting the success or failure of students in various school subjects by giving a large number of tests to entering students and correlating their future success in the different subjects, (b) determining the degree of intelligence needed to be successful by finding the average intelligence rating, (c) determining intelligence

test and educational rating relationships to vocational choices of students, (d) determining the relationship of intelligence testing and the nature of the homes from which students come, (e) making an intensive comparison of ten or more students scoring especially high on intelligence and education tests with a similar number attaining relatively low scores, and (f) trying to determine whether superiority is due to heredity, methods of work, training, application, physical vigor, or social qualities (Board of Education of the City of Los Angeles, 1923, pp. 7-8).

Vocational Education in Los Angeles Schools

In the early 1900s, research revealed the relationships between vocational education and intelligence testing. Major studies were published by Pressey and Pressey (1914), Bobbitt (1922), and Humm (1923), while other researchers extended their studies to investigate the cause of vocational education placement based on intelligence test outcomes inclusive of McCall (1922), Ward (1922), and Agee et al. (1926). In 1923, the Los Angles Educational Research Bulletin integrated monographs published by Pressey and Pressey (1914), and Franklin Bobbitt (1922). In particular, the Board of Education City of Los Angeles (1923) referenced Pressey and Pressey's (1914) monograph that explained the principles of intelligence tests used to measure mental abilities. Also, Franklin Bobbit's (1922) Curriculum Making in Los Angeles drove the new standard of educational policies and practices (Board of Education City of Los Angeles, 1923, p. 4). The Board of Education City of Los Angeles (1923) identified four functions of high school research: (a) to diagnose difficulties of individual students, (b) to study causes of failure and recommend remedies, (c) to give prognostic tests as a basis of guidance, and

(d) to promote educational and vocational guidance (p. 4). Humm (1923), a Los Angeles City School Educational Counselor, published an article that identified quantitative education as a practical attempt to use Terman's intelligence tests to classify pupils in categories of advanced, average, and slow in mathematics and English (Board of Education City of Los Angeles, 1923, p. 4).

In 1922, Ward, a research assistant in Los Angeles City schools, and Terman (1923;1931) studied Los Angeles City students to structure effective vocational education guidance in schools. Ward's (1922) intelligence study identified students' intelligence and special abilities to determine vocational placement. The Army Alpha Test, created by Terman was also used to identify student's intelligence, responsibility level, and initiative levels needed to place students into suitable vocations (Board of Education Los Angeles City Schools, 1922c, p. 2). However, McCall's (1922) research focus extended beyond mental, special aptitude, or ability needed for certain occupations. McCall also focused on moral attributes similar to Kershensteiner (1911) and Cooley (1914). According to Agee et al. (1926), a Los Angeles high school's counseling committee analyzed the counseling needs in the area and identified two important facts: (a) curriculum and testing methods must be modified to meet need of different groups, and (b) an inflexible school system produces wasted human material. Similar to Ward (1922), Agee et al. (1926) used Terman's mental ability test along with a school personnel questionnaire to determine student occupational placement (pp. 2-15).

Lawrence's (1922) and Tupper's (1923) studies were not specific to Los Angeles; however, they do shed light on how vocational education was viewed as a low track.

Tupper and Lawrence studied aspects of vocational education for Mexican students. Tupper's analysis revealed that separate facilities for Mexican students would result in a more efficient classroom and economic savings. Both researchers indicated that children of Mexican laborers routinely scored as subnormal on intelligence tests (Lawrence, 1922, p. 11; Tupper, 1923, p. 102).

Summary Statement

Summarized in this literature review are scholarly, professional, primary, historical documents that relate to the origins of vocational education, intelligence testing, and the system of tracking. The review of literature specifically summarizes documentation of social and political attitudes that influenced educational reform movements. The views of leading education theorists and child psychologists from 1880 through1940 who supported or opposed such movements were included as well. Literature on the vocational education movement was analyzed from a broad spectrum, then streamlined into a narrow scope that focused on the transformation of vocational education into a low track for perceived low ability students in Los Angeles, California. Identification of an undercurrent of racism was highlighted in themes relating to immigrants and Negroes. The end results of such undercurrents are examined and discussed more deeply in the findings in Chapter 4.

Chapter 3: Methodology

The objective of this study is to develop an historical overview of the origins of tracking and the policies and practices that supported it. With an in-depth knowledge of the tracking phenomena, education policymakers understand how and why tracking was developed, and how it currently affects minority students' educational opportunities. The research design for this study relies on a systematic analysis of factors that answer how and why tracking became a part of the Los Angeles City School system. In-depth reviews of the literature have revealed major themes related to tracking in the late 1800 through the early 1900s, resulting in a logical, systematic identification of factors that influenced tracking, inclusive of an undercurrent of social attitudes that accepted racial minorities being disproportionately placed in lower educational tracks.

Research regarding Los Angeles County Schools Districts' system of classroom assignment as it relates to history has not been included in the critical race theory of education body of knowledge, specifically, how tracking policies and practices affected minority student class assignment in 2006-2009. In this study, I reviewed the history of vocational education, intelligence testing, and ability grouping from 1880-1940, particularly in Los Angeles from 1923-1927. As stated in the literature review, primary sources were mainly used for their real-time directness and clarifying nature. The primary sources contain narratives and quantitative studies concerning the overall vocational education movement and its descent into a lower track assignment through the efficiency reform movement. Educational theorists such as Bobbitt and Cubberley investigated

school systems and made recommendations that would make curriculum and instruction along with policies and procedures economically efficient.

I garnered primary sources were garnered from educational research bulletins, journal articles, and books from the late 1800-1930. However, seminal studies, historiographies, and media commentaries by authors were gathered dating from 1985-2006. The research questions were: What is the historical relationship between vocational education and tracking? What policies and practices enforced tracking in the late 1800s and early 1900s? What are contemporary tracking policies and how do they affect tracking practices in 2006-2009? These questions and additional questions that arose during the data collection process are answered through a systematic narration of themes, evidenced in historical archives that connect the research problem to the methodology. The problem of historical and contemporary tracking policies and practices that segregate students in some Los Angeles High Schools was analyzed. Four major operations took place to uncover content for proper interpretation: (a) gathering sources or a strategic search of information (search or literature review), (b) determining authenticity and credibility or the appraisal of the material for evidential value (criticism), (c) synthesizing historical data by themes to construct a formal statement of findings, and (d) providing an exposition in terms of factual significance or lack thereof (Garraghan, 1946).

Research Method and Design

Historiography is the preferred methodology for this study because historical records and interpretation of historical events developed a sound logical conclusion in regards to the origin of vocational education, tracking, and intelligence tests. According

to Manslow (2006), historiography records and interprets the nature of change and the continual affect and effect of those changes to understanding the past. Other types of research methodology would not clarify or answer questions in regard to past events, their significance, their relevance, and lasting effects on certain populations that occurred in the late 1800s and early 1900s. In short, other methodologies are usually unsuccessful at tracing historical events. Historical documents were critically evaluated for authenticity and internal motives which allow evidence to be viewed as fact. A series of questions like, "What were the motives of the author as it relates to societal discourse at the time? What were the cultural influences as reflected in the literature? Why and what was included or excluded?" can result in an historical analysis process that aids in turning evidence into fact (Manslow, 2006).

Specific historical research processes developed by McDowell (2002) in *Historical Research: A Guide* and Manslow's (2006) *Deconstructing History* grounded this study. McDowell served as a fundamental guide for researching and writing about history. The primary resource documents used in the literature review underwent external and internal criticism based on Mc Dowell's quality and credibility checks. McDowell indicated that the value of any source will depend on several factors: (a) elapse of time between an event and recollections, (b) its purpose and intended audience, (c) physical proximity to the events observed, (d) perspectives and powers of observation possessed by the observer, and (e) a comparison of a variety of sources to obtain a satisfactory account of historical events (p. 109). External and internal criticism is essential because the opinions of researchers must be examined, evaluated, and declared genuine. External

criticism enables the researcher to authenticate opinions by examining authorship, establishing where and when the opinions were produced, and to analyze preexisting material used by the author. In regard to internal criticism, literature was reviewed that is determined as credible works based on consistent cross referencing of the tracking discourse in a particular time frame.

The Role of the Researcher

Deconstructing history is a process by which I analyzed the complex discourse of the past to understand subjects related to tracking, vocational education, and intelligence testing. My role was to analyze the problem through an historical lens and identify documents that support or negate the problem. An identification and interpretation of primary source materials that directly reflect the views and behaviors of individuals and groups compared with an analysis of scholars' view points on the issue of tracking will aid in meaning discernment. As a researcher, I interpreted unique events, related theories and studies, major themes and their chronological progressions counterbalanced with an examination of economic and social trends that effected tracking policies and practices. As new questions arose throughout the process, new evidence was sought to conclude in a descriptive interpretation of evidence pertaining to the historical system of tracking.

Data Collection, Processing, and Analysis

An in-depth search for historical documentation was carried out that identified the following journals as authentic and relevant to the research problem: *The Los Angeles Education Research Bulletin, the Psychological Bulletin, the Monthly Labor Review, State and County School Administration, Educational Review, Education Researcher,*

School and Society, and Journal of Applied Psychology. Together, research articles were highlighted in these journals that reinforced historical trustworthiness of source documents and confirmed external credibility from 1880 through 1940. Contemporary documentation was garnered from the *Los Angeles County School District* website *, Antelope Valley High School* website, and *California Department of Education* website from 2011. Documents on current tracking policies and practices, school accountability report cards (SARC reports), and California Department of education aggregated data on student track placement were garnered to support the tracking comparative analysis.

In this study, an in-depth understanding of the origins of tracking and the policies and procedures that supported it from 1923-1927 compared to 2006-2009 was developed. An analysis of the data was culminated in a narrative report, which demonstrated the impact of tracking on minority students' educational opportunities. Only archival data are used and no data were collected from individuals. Mainly, the research questions guided the data search and the selection of sources used. Archival documents used in this study also meet the following criteria: (a) primary resources closely related to major educational reform movements in the late 1800 and early1900s; (b) primary studies that highlight and explain educational theorists' and child psychologists' outcomes as they relate to the vocational education and tracking movements; (c) primary resources that explain politically commissioned studies nationally and locally and their effect on vocational education, tracking, and intelligence testing; and (d) school studies in addition to vocational education, tracking, and intelligence testing as they relate to minority student track assignment.

Research publications such as the *United States Bureau of Education Reports* (1893-1914), the *National Education Research Bulletin* (1893-1918), the *Psychological Bulletin* (1913), and the *Los Angeles Education Research Bulletin* (1923-1927), along with other research publications, were examined for primary data related to tracking. Authentic internal and external events and theories that influenced tracking during 1890-1930 were accessed through archival databases. A thorough search for electronically digitized books, reports, and documents written in 1890-1930 was carried out. To optimize the search related to the research questions, I focused on keywords such as *tracking, ability grouping, vocational education, intelligence testing, minorities and vocational education, minorities and intelligence testing, Los Angeles School District and intelligence testing, California and intelligence testing, eugenics and ability, heredity and intelligence, Negroes and vocational education, Colored and vocational education, Mexicans and vocational education, immigrants and vocational education,* and *high school reform* throughout the period between 1880 and1940.

Archival documentation was coded into major themes. The process of deconstructing history was used to analyze the complex discourse of the past to understand subjects related to tracking, vocational education, and intelligence testing. Overall, the historical analysis was an interpretation of events to understand historical discourse as it relates to policies and practices of tracking in the past and today. Discourse as it relates to the educational opportunities of African Americans and immigrants in the past and today were compared in the final analysis. An in-depth narrative of the events and an explanation of why they happened along with assumptions

and forces that influenced the process were drawn to a conclusion regarding schools in Los Angeles County, particularly Antelope Valley High School.

Archival documents were reviewed, summarized, and coded concurrently by theme to *EndNote X* and to a literature review matrix that disaggregated the information by author, date, theoretical framework, research questions or hypothesis, and methodology. I analyzed and synthesized only relevant historical studies to understand and interpret historical factors closely related to the research problem. Categories such as the result analysis, the conclusions, the implications for future research, discussions of research outcomes or view points, relationships to previous data, and participant pools were coded by theme and synthesized.

I used a specific coding method as described by McDowell (2002). McDowell indicated that drafting accurate and sufficient detailed and organized notes are easily retrieved when preparing drafts. Systematic detailed note taking on identified topics or themes using hand notes assisted me in putting essential arguments in my own words. The research questions led the data search and the selection of sources used. Each EndNote entry included a summary of the article and was categorized based on the theme or issue. The entry was flagged by a key word so it could be easily assessed as a subtopic for various themes or issues as the research proceeded. Notes on related topics were saved under a specific heading in the EndNote program. The main points were listed first so that principal themes or issues could be identified for each entry. Key words were listed in bold so specific topics can be quickly located and classified. Important points were underlined. Quotations or paraphrases were placed within brackets to avoid

confusion between my comments and the quotations. The purpose of these coding techniques was to assist in identifying and classifying the content of my research notes so that they could be effective when writing the findings based on material that I gathered.

Summary

This chapter explained the methodology that helped to focus the data collection process, notwithstanding, how the research design derived logically from the problem statement. The role of the researcher and the data collection procedures were explained, along with definitions and the process by which internal and external credibility was carried out. Major research articles and journals from the early 1800s and late 1900s were identified as the primary resources to forward the study. The rationale and importance of theme coding for a concise historical narrative was explained. Also, open-ended research questions were reiterated along with a description of a justifiable gap in the literature.

Chapter 4: Findings

Introduction to the Study Process

The purpose of this study is to develop an historical overview of the origins of tracking and the policies and practices that supported it from 1923-1927 compared to 2006-2009 in a school district on the West Coast. The objective of this study was to examine historical tracking policies and practices as they related to vocational education on the West Coast starting with the vocational education movement from 1880 to 1940. Included in the process is an analysis of how vocational education became a norm, and the manner in which intelligence testing became a sorting tool. Additional themes of focus uncovered in the literature review are: the challenges high schools faced in educating immigrants and African Americans, the integration of intelligence testing, and the school efficiency movement. These themes became the solution to the immigrant and Negro problem in Los Angeles, California in the early 1900s.

This study contributes to the critical race theory in the education. The critical race theory in education supports the need to detrack public schools for equal educational opportunities for minority students. An understanding of the origins of tracking and the policies that support tracking will help educational policymakers understand how and why tracking was developed, and how it currently affects educational access for minority students. Critical race theorists connect educational inequalities of the past and present. Critical race theorists continue to highlight the actual state of education for minorities despite the belief that educational opportunities are equal for all students.

I conducted a thorough search of archival databases on tracking during 1890-1930 and closely examined internal and external events to confirm the authenticity of primary documentation. I also performed a systematic search of historical data to understand how and why tracking was implemented and to determine the authenticity and credibility of the content inclusive of a synthesis and exposition of people and events that influenced educational inequality through tracking. Finally, I investigated the research problem through the critical race theory lens, which resulted in a narrative of the findings.

Historical documentation was mainly garnered from electronically digitized books, reports, and documents from archival websites. Research publications such as the Los Angeles Education Research Bulletin (1923-1927), the National Education Research Bulletin (1893-1918), the United States Bureau of Education Reports (1893-1914), and the Psychological Bulletin (1913) constituted the bulk of the studies used in this report. Such keywords as *tracking, ability grouping, vocational education, intelligence testing, minorities and vocational education, minorities and intelligence testing, Los Angeles School District and intelligence testing, California and intelligence testing, eugenics and ability, heredity and intelligence, Negroes and vocational education, Colored and vocational education, Mexicans and vocational education, immigrants and vocational education,* and *high school reform* drawn from 1880 through 1940 generated most of information targeted for this study. The archival documentation was coded into five major themes: Late 1800s and early 1900s; Vocational Education Movement, 1917–1923; School Efficiency and Scientific Reform Movement, 1923-1927; Ability Group

Movement Based on Intelligence Test Measures, 1996-2010; and Contemporary Tracking Policies.

The history of tracking was deconstructed for understanding and interpretation. Complex discourse around the subjects of intelligence testing and vocational education as it related to minorities was the focus. Archival documents were reviewed, summarized, and coded concurrently by theme to *EndNote X* and to a literature review matrix that was disaggregated by dates and research questions. An analysis and synthesis of relevant historical studies was conducted to understand and interpret historical factors closely related to the research problem. A categorization of results, analysis, conclusions, discussions of research outcomes or view points, relationships to previous data, and participant pools were coded by theme and synthesized. Finally, an historical analysis of events as they relate to policies and practices of tracking in the past and present was synthesized into a narrative. Discourse as it relates to the educational opportunities of African Americans and immigrants in the past and present were compared in the final analysis. An in-depth narrative of the events regarding schools in Los Angeles County and an explanation of why they happened along with assumptions and forces that influenced the process were drawn to a conclusion.

Systematic detailed note taking on identified themes using hand notes aided in the connection of individual arguments. The research questions guided the data search and the selection of sources used. Each EndNote entry included a summary of the article and was categorized based on the theme. The entry was flagged for easy access and as a subtopic for various themes that were revealed. Notes on related topics were saved under

a specific heading in the EndNote program. The main points were listed first for identification of principal themes. Key words were listed in bold, so specific topics could be quickly located and classified. Important points were underlined. Quotations or paraphrases were placed within brackets to avoid confusion between my own comments and cited work. The purpose of these coding techniques was simply to enable me to easily identify and classify the content of my research notes to use effectively in Chapters 4 and 5.

Most of the data compiled for this study came from reports published in the Department of Psychology and Educational Research Bulletin of the Los Angeles City Schools as well as historical documents published by educational philosophers and psychologists from the early 1800s through the late 1900s. Studies documented by the Education Research Bulletin became the catalyst for school board adopted class assignment policies from 1996-2010. However, as the 2010 decade drew to a close, a school district on the West Coast revised their tracking policy in an effort toward meaningful social change by offering grade level curriculum for all students. Such events assisted in answering the questions posed in the dissertation: (a) What is the historical relationship between vocational education and tracking? (b) What policies and practices enforced tracking in the late 1800s and early 1900s? (c) What are contemporary tracking policies and how do they affect tracking practices? Figure 1 is a guide for the historical analysis construct along with the list of the following events:

1. Late 1800s and early 1900s: Vocational Education Movement
2. 1921–1923: School Efficiency and Scientific Reform Movement

3. 1923-1927: Ability Group Movement Based on Intelligence Test Measures
4. 1996-2012: Contemporary Tracking Policies

It was necessary to overlap the first three periods for several reasons: (a) Some time periods are not exact, (b) identified educational movements were integrated at certain points, and (c) public and private education discourse continued throughout the movements. I provided historical documentation in the appendices to assure that the accuracy of the data. Primary documentation is presented such as the National Association of Manufacturer's graph titled "A Choice of Routes to Efficiency" created in 1915 (see Appendix A) along with Terman and Yerkes Alpha Army Test data that were revised into intelligence tests (see Appendix B). An account of key conversations regarding vocational education and intelligence testing is given in the findings as well. These five major events collectively and independently took place from 1893-1923. A collaboration of all the events influenced tracking policies from 1996-2010. All such events were critical in formulating the building blocks on which the City of Los Angles developed its own tracking system. Primary research studies highlighted in the *High School Research Bulletin of Los Angeles City School District* from November 1922 through May 1927 along with class assignment policies implemented in Los Angeles School District 2006-2009 served as the only source of data in this section. The historical data allowed me to access information pertinent to the development of tracking policies and their effect on minority student educational opportunities. The data also clarified how and for whom tracking was integrated in the Los Angeles City School system. The

historical data were analyzed by examining past education research that resulted in policy formation and by inspecting Los Angeles School District class assignment policies.

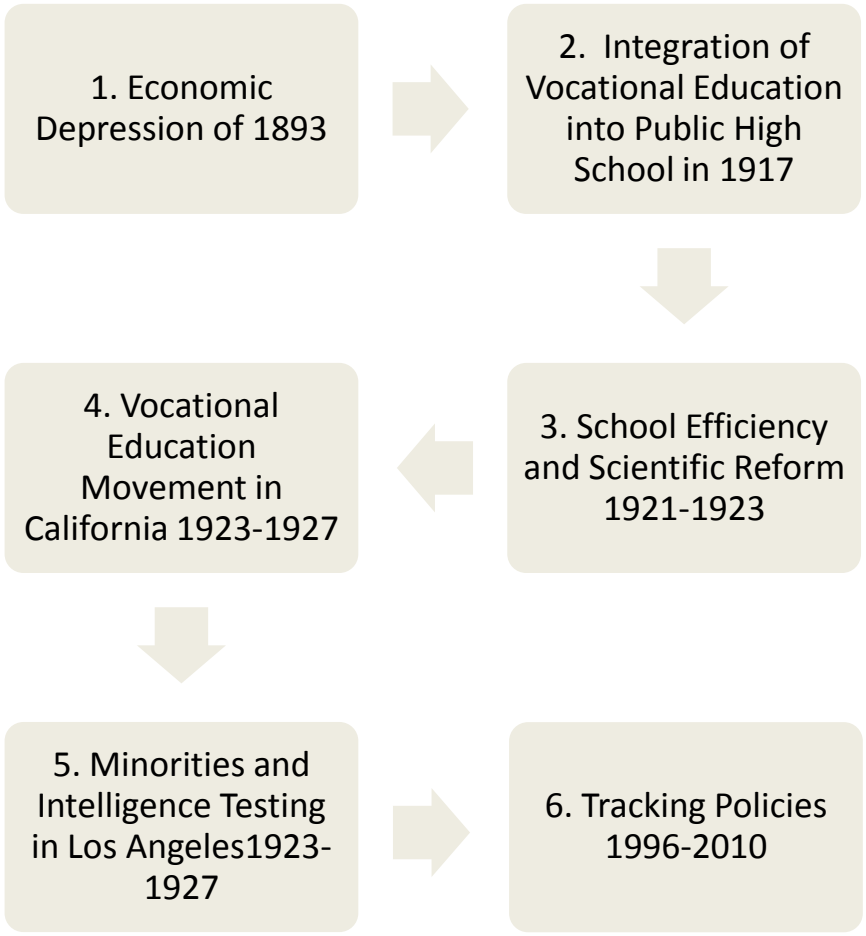

Figure 1. History of vocational education and tracking (1891-2010).

History of Vocational Education and Tracking (1891-1917)

In 1893, an economic depression caused hard times in the United States. The depression left many poor Americans jobless. The affluent labeled the jobless lazy, and the jobless blamed the government for inadequate employment support systems. Government legislators, labor unions, and leading manufactures formed commissions to investigate vocational training constructs as a safeguard against future massive joblessness. Between 1861 and 1914, industrial intelligence challenges kept America from competing in the global economic market. Americans compared their manufactured goods, factory systems, and apprenticeship programs to those in Germany and found themselves lacking. The United States began to invest in human resources for factory systems and apprenticeship programs to compete with other rapidly developing industrial nations. America's need to create superior products resulted in vocational training programs. The vocational education movement in the early 1900s transformed into integrated vocational and academic public high schools around 1917.

Vocational education's integration into public high schools in 1917 was meant to alleviate the problem of unskilled workers during the Industrial Revolution era. However, students assigned to vocational or lower academic tracks experienced a different type of curriculum that was diluted and standardized. Low track and vocational student were denied enriched curriculum content that enabled high track students' access to college entrance and professional careers. Minority and disadvantaged students were overrepresented in lower tracks, which resulted in overexposure to an inferior curriculum. The phenomenon reduced minority and poor students' career and academic choices to

mainly vocational ones. This phenomenon became an issue for social change in America's school systems (Oakes, 1985, 2005).

The three topics that guided vocational education discourse in the late 1800s and early 1900s were the following: (a) The societal advantages and need of vocational or industrial education, (b) the advantages of combining vocational education and public general education to develop the whole child, and (c) the divisive nature of separate vocational and general public schools. In 1892, the National Education Association (NEA) financed The Committee of Ten with the support of Hoke Smith, creator of the Smith-Hughes Act of 1917, with legislation for the purpose of understanding and clarifying educational values in general. In 1893, the Committee of Ten Secondary Studies asked the question: What should a student gain from his/her education? The results suggested that each educational subject should cover predetermined major concepts, instructional best practices, and a proper assessment of college readiness. At the time, the report was considered the most important educational document ever published in the United States.

Douglas Commission on Industrial Education, 1905

In 1905, Massachusetts legislators created the Douglas Commission on Industrial Education. Unlike the Committee of Ten, the Douglas Commission conducted a community needs assessment that integrated the advice of the leading manufacturers, community leaders, labor unions, and social science scholars. The commission noted that some speakers were concerned that the literal scope and methods of public school education did not meet the needs of industry or society. The community argued that a

more practical form of education was needed (Report of the Commission on Industrial and Technical Education, 1906). However, as noted previously, the Committee of Ten's recommendation of more time allocated to literal subjects contrasted with The Douglas Commission's recommendations for a more vocational education.

Without regard to the Committee of Ten's secondary school recommendations, the Douglas commission findings contributed to a nationwide campaign favoring industrial vocational schools (Smith, 1999). Although the commissioners' temporary and mainly voluntary positions did not give them the power to formulate specific plans regarding industrial education, their assertions and identifications influenced many across the country. The commission advised the state regarding effective existing vocational policies and ways to further state development of a vocational education program (Report of the Commission on Industrial and Technical Education, 1906). The Commission on Industrial and Technical Education's report identified two types of workers: low-grade and high-grade. Children ages 14-16 without formal education along with elementary school drop-outs were considered low-grade limited intelligence workers. Low grade skills took up to three months to master, whereas high grade trades took years to learn and increased industrial intelligence, producing the type of worker whom manufacturers needed to compete in the global market.

The Commission on Industrial and Technical Education's report also recommended that the state should decide whether to develop vocational education publicly or privately. They recommended courses such as agriculture, mechanics, home economics, and productive industry and that could be taught in elementary school. They

also recommended that high school subjects be taught in relation to industrial needs. For instance, math, science, and drawing were relevant to the skills needed in industry. More specifically, algebra and geometry were relevant to the construction trade, and botany and chemistry were relevant to horticulture and agriculture.

Upon passage, the vocational education law stipulated three mandates: (a) cities and towns create vocational schools at their own expense, (b) only parents could voluntarily enroll their children, and (c) that children continue their public school attendance (Report of the Commission on Industrial and Technical Education, 1906). However, as the statue attracted nationwide support, financial responsibility and parental consent requirements changed. Soon after the statue was evoked, city officials realized vocational schools were too expensive to finance, at which point, the city council began to seek financial support from the federal government.

National Society for the Promotion of Industrial Education 1907

The National Society for Promotion of Industrial Education (NSPIE) was founded in 1906. Their sole purpose was to form a coalition to support vocational education legislation, specifically, government funding of vocational training. The coalition consisted of prominent business men, employers, and representatives of labor unions, social science students, and educators. The labor groups included the American Federation of Labor (AFL), National Association of Manufacturers (NAM), U.S. Chamber of Commerce, National Democratic Party, Progressive (Bullmoose) Party, American Home Economics Association (AHEA), and many others (Hillison, n.d.). The

National Education Association (NEA) briefly joined the coalition, but opted out after the agenda was declared for a dual system of education.

In 1908, NSPIE politically pursued federal funding for vocational training. The members argued that boys 14-18 who were not interested in formal education should be trained for a trade instead of becoming unemployable or moving from one menial job to the next. The coalition attempted to measure the unproductiveness of vocational education in public schools, and they concluded it was geared more toward culture than work. NSPIE coordinated a conference to develop Americans in the area of industrial intelligence with the help of Charles Richards of Teachers College at Columbia University. The conference included a White House reception at which President Roosevelt said, "School should train toward farm and workshop and not away from it" (Richards, 1907, p. 440). Charles W. Elliot, President of Harvard from 1869 through1909 and an advocate for industrial education said, "….teachers in elementary schools should 'sort' the children according to the walks in life they are most evidently fitted" (Richards 1907, p. 334). Elliot's position resembled the tracking movement as early as 1907, whereas, the Committee of Ten opposed tracking and advocated for the integration of culture and academics.

In 1918, an extension of the Committee of Ten's recommendations was published by the NEA's Commission on the Reorganization of Secondary Education (CRSE). CRSE'S (1918) booklet addressed the democratic and social needs for comprehensive high school students. In *The Seven Cardinal Principles of Comprehensive High School*, the commission argued that there should be a relationship between vocational and general

education studies to develop an aptitude of diversity and cooperation among all students, and to allow the students to get to know themselves and a variety of careers to make suitable choices (Commission on the Reorganization of Secondary Education, 1918). Several commissioned reports in the early 1900s were aimed at gathering support for vocational education in separate state and locally funded facilities. For example, the Report of the Commission on Industrial and Technical Education in 1906, the National Society for the Promotion of Industrial Education in 1907, the Commercial Club of Chicago in 1910, and the National Association of Manufacturers in 1915 all supported separate vocational and academic facilities. In 1907, the National Society for the Study of Education included the Committee of Ten's Report, which examined vocational education and college entrance requirements. The National Society for the Promotion of Industrial Education investigated the process of teaching courses differently depending on the student's future goals, which resulted in their decision to financially support both academic education and economic development. They reported that the only way for the survival of either was through societal support.

In 1914, The Report on Industrial and Vocational Education in California published Edwin R. Snyder's research as a means of garnering societal support for industrial and vocational education. As the Commissioner of Industrial and Vocational Education in California, Snyder investigated the authentic conditions of manual, domestic, and vocational arts in public schools of California. He also analyzed the efficiency of general educational situations in the California school system. Snyder sought to understand how to address children who posed different mental and physical

traits and different capabilities within those traits, and how to address children who were differently situated, financially. Snyder integrated the Seven Cardinal Principles of Education and Dewey's (1906) education and democracy in his report published by the Industrial and Vocational Education Commission. It was noted by the State Board of Education (1914) that Snyder's report "was also to give a clear and definite outline of vocational education of … in California" (p. 11). Although Snyder reported that the State plan for vocational education was based on Dewey's philosophy of education, realistically, Snyder's vocational education plans were diametrically opposed to those of Dewey . Snyder concluded that every boy and girl should be trained in a vocation based on their abilities to be efficient workers and efficient citizens, whereas Dewey argued that students should be exposed to both vocational and academic education programs as a balance to reach the whole child.

Dewey's vocational philosophy directly correlated with Booker T. Washington's vocational philosophy for Negro education. Snyder quoted a passage written by Dewey (1906) in his *Philosophy of Education* publication. Snyder wrote, "Dewey states that the aim of education is to produce the capacity of further education" (as cited in State Board of Education, 1914, p. 11). Snyder noted that vocational education is a helpful and growing condition in California and indicated that California had adjusted itself economically with the promotion of vocational education in trade and industrial industries and would assume a prominent place in the public mind. In short, Snyder's goal was to report and inspect vocational programs to encourage the introduction and extension of vocational education by counseling the California Board of Education,

school superintendents, and those connected to the scientific education research movement.

Dewy (1906, 1913, 1916) was strongly opposed to separate vocational and academic facilities, whereas Snyder was a strong advocate for leading students into these separate facilities. Although Snyder used Dewey's statement as implied support for his vocational education philosophy to garner public support, Dewey's vocational education philosophy contrasted sharply with Snyder's. Ellwood Cubberley, who was also an advocate for vocational education and ability grouping, and whose philosophy was expounded upon in this section, edited and published a document commissioned by the State and County School Administration, which highlighted Dewey's (1913) article, *An Undemocratic Proposal in Vocational Education* in which the question was addressed of the consequences for the future of democracy through vocational education. The concept was of major concern for Dewey. He argued that education should be truly democratic, more than any other public organization. Dewey believed that the improper facilitation of education would definitely support society's tendency to divide schools and society into classes. Dewey surmised that it would be better to suffer with the present broken educational system than to separate industrial education from academic education because doing so would section off a group of students into a class of laborers (p. 366). Dewey, Cooley, and Kerschensteiner feared that once a class of people was taught vocations only, class development would be based only on industrial needs. Dewey feared for the lack of student choice in career or education, whereas Cooley and

Kerschensteiner believed in vocational education for the development of citizenship rather than predetermination of life goals by the manufacturing community.

In 1912, Edwin G. Cooley, former Superintendent of Chicago Schools, was commissioned by The Commercial Club of Chicago to investigate the vocational schools of Europe. George Kerschensteiner was the expert in German industrial education at the time. Both Kerschensteiner and Cooley investigated America's industrial schools and advised the National Society for the Promotion of Industrial Education to abandon all college preparation in vocational schools. This recommendation directly contrasted with the education philosophies of Dewey, Inglis, and Davenport, the leading educational theorists. The latter's research concurred in that incorrect integration of vocational schools would separate vocational and traditional programs and result in segregation along vocational lines. Several theorists advocated for a balanced integration of traditional and vocational education as the best option for high school students, inclusive of Booker T. Washington (1903). In several accounts, these theorists urged educational authorities to provide both forms of education in traditional public schools to allow all students to experience vocational and academic pursuits.

In 1910, The Commercial Club of Chicago commissioned Edward G. Cooley who historically supported practical evening training schools in Chicago, Illinois, and the U.S. Government Naval Training Schools at Lake Bluff. Cooley's investigation was to determine how the Commercial Club could further support vocational schools for unemployable minors 14 years of age and older. The investigation developed from their concern regarding the needs of minors who had not matured physically, mentally, or

morally but still must support themselves. Cooley's report indicated that Germany's industrial progress was not only due to technical training but also to legislation protecting and stimulating industrial enterprise. The report indicated that elementary education should not be substituted for vocational education in Germany because it may "hinder further development of the child's mental powers" (Cooley, 1910, p. 330). The Germans believed vocational education assisted in clarifying the need to identify student career interests; especially for those students who got bored in general academic school environments. Cooley's report defined the importance of students being taught their civic duties through vocational school to build character and to deter them from becoming juvenile delinquents. The study also detailed the German attitude toward the vocations for students with disabilities. It clarified the of value of vocational education for "backward" students and the financial benefit over and above an academic education. Similar to Roosevelt's beliefs, the Germans cautioned against a rush to office work away from the shop and the farm.

Cooley's list of considerations resulting from his findings were that (a) factory production in place of hand and eye skills changed the nature of apprenticeship resulting in a need for revitalization, and revitalization could take place by offering continuation school in conjunction with trade school supported by the federal government; (b) children between the ages of 6 and 14 should be taught general cultural education, and student differences should be taken into consideration by modifying assignments to match the needs of individual students; no system should be constructed to rush students 14 and over out of elementary school into vocational school; (c) the most important plan for

developing industrial vocational schools was to develop continuation schools that demanded that 6 to 10 hours a week be dedicated to vocation; instruction should be given by highly skilled teachers with industrial experience; subjects should be treated in relationship to their vocational value, similar to the Douglas Commission Report; (d) secondary vocational schools should be established for students who were currently working in the industry and had decided which trade they would like to develop, but had not completed elementary school; and finally (e) a Bureau of Vocation Guidance that connected elementary and vocation needed to be set up. Overall, the recommendations assisted the Commercial Club in strategically supporting vocational education so that the poor would have an opportunity at gaining employment and perhaps wealth (Cooley, 1912).

Dewey (1913) reported that Cooley's research in Europe inspired Cooley's Vocational Education Bill. Dewey respected Kerschensteiner's noteworthy authority in technical and trade schools. Dewey noted that although the Europeans definitely based their educational system on class distinctions and naturally based schools along class lines, he agreed with Kerschensteiner that industrial training should not primarily be for the sake of interested manufacturers, but for the sake of citizenship and carried out purely on an educational basis. In short, Dewey advocated for expansion and supplementing the school system by integrating vocational education though noting that those who believed in a separate existence would take pleasure in a segregated lower or labor class.

In 1915, the Report of the Committee on Industrial Education included a flow chart depicting the integration of vocational education into public schools (see Appendix

A). The flow chart was presented at the Twentieth Annual Convention of the National Association of Manufacturers (NAM) in New York. The document was also consistent with several documented accounts of vocational education in comprehensive high school constructs, and the flow chart represented a tiered system from vocational opportunities to university attendance. Plotting an integrated vocational school with public school to clarify its feasibility, the originators extended secondary education by integrating night school, continuation school, evening school, and university extension programs. The conceptualization of vocational education was developed around the traditional academic education framework. Ultimately, Los Angeles County adopted the integrated model, as reflected in their 1920-1970 board minutes.

NSPIE and the Smith-Hughes Act of 1917

Also known as the Vocational Act of 1917, the Smith-Hughes Act represented the first nationally approved vocational education training in public schools (Smith-Hughes Act, 1917). The overall goal of the Act was to enact legislation that mandated federal funding of vocational education in the areas of agriculture, trades and industry, home economics, and financial support for the States in preparing vocational subject teachers. The Act was written by Hoke Smith and Dudley Hughes and commissioned by President Woodrow Wilson who appointed the Commission on National Aid to Vocational Education. The Smith-Hughes Act of 1917 specifically targeted students over 14 years of age for job preparation. The Smith-Hughes mandate stated that "… part-time schools or classes for workers over fourteen years of age who have entered upon employment, and such subjects in a part-time school or class may mean any subject given to enlarge the

civic or vocational intelligence of such workers over fourteen and less than eighteen years of age" (p. 5). In other words, some money was to be used to train students who are already working. First, curriculum had to be geared toward teaching the students civic meaning and to help them understand their responsibilities to their community and country. Secondly, vocational intelligence must be addressed. This structure related closely with the German's structure in the Cooley's report. Moreover, Smith and Hughes used the 1910 census report identifying 12,000,000 people working in agriculture and over 14,000,000 people working in manufacturing with very few having adequate training (as cited in Patterson, n.d.). Eventually, the Smith-Hughes Act of 1917 financed vocational school on a national level. However, monies were not distributed to Negro schools at the same rate as White schools. African Americans were denied apprenticeship opportunities, not taught highly skilled trades, and were kept in segregated schools, which mainly taught them service trades. Furthermore, Negro teachers were paid far less than White teachers even though the act specified opportunities for all students nationally.

The Scientific Research Movement (1904-1916)

In 1904, the European Minister of Public Instruction commissioned Alfred Binet to construct a measurement tool that would quantify the intelligence of retarded children. The purpose for the study was to insure that general education was not the best environment for retarded children before placing them in a separate environment. Because the European government wanted to make sure school faculty were not making important educational decisions haphazardly or subjectively, Binet devised a more

careful measurement of retarded children's abilities to merit placement in special classes. Nonetheless, Binet warned that his Binet-Scale test was not structured to measure the intelligence of normal children (similar to Terman's use of the Binet scale). Alfred Binet and Simon, his colleague, agreed that science could measure intelligence in many cases, but they were concerned about the inconsistency of the measurement produced by the Binet-Simon Scale, which was subject to the examiner's interpretation. Binet and Simon witnessed inconsistencies in diagnosis from one doctor to the next, and the doctors disagreed with the terms used requiring a subject to be labeled a moron, imbecile, normal, or superior based on measurement outcomes.

In 1916, Binet and Simon investigated the relationship between intelligence and scholastic standing. They studied 100 children who were the same age or within 2 months of each other and classified them as advanced, regular, and retarded. Their results identified that scholastic divergence was greater than intellectual divergence, meaning the children's academic knowledge was more stratified then their intellectual intelligence. They determined that subnormal children were sometimes labeled retarded academically by 6 or 7 years, but fewer years of stratification existed in the area of intelligence. Out of the 100 children, Binet noted that a child may be identified as retarded academically by 2 or more years but intellectually by 1 year. The study showed the average difference as very low: about .07 years. In short, children have intellectual intelligence according to the degree of instruction they have experienced. Binet argued that intelligence generally goes hand in hand with degrees of instruction and surmised that the most educated were considered the most intelligent.

Binet concluded that his measurements were not absolute and the amount of education a child has experienced had a great effect on the outcome. For example, Binet discovered that a child who did not attend school but stayed at home to raise cows was behind in school educational experiences and would be identified as retarded based on the Binet-Simon Scale. Binet began creating a scale that measured mental age to determine the proper grade a student should occupy in school. When Lewis Terman discovered Binet's scale, he began to revise and extend Binet's work.

Terman, an American psychologist known as the pioneer of educational psychology at Stanford University was a prominent eugenicist and member of the Human Betterment Foundation, and had been a principal and professor in Los Angeles County Schools around 1905. Terman expanded and revised Binet's scale to calculate a child's mental age. While Binet and Simon were very careful to compare children of the same demographic such as age, race, and social conditions as participants in the norm group, Terman was not as careful as they about ensuring that his student participants possessed similar demographics. Binet, however, took every precaution to ensure reliable measurement scales to counter past complaints from his colleagues that his scales were subjective. Unlike Terman, Binet and Simon refused to borrow or revise others' work as a basis for their studies because they wanted to ensure that their measurement of intelligence was based on consistent participant pool demographics. Binet and Simon took into account social conditions and race by insuring all from the norm group were laborers from Parisian background as opposed to people living merely in the region of Paris so that the argument of different environments could not be raised.

In 1916, Terman reported that the constant and increased use of the Binet-Simon intelligence scale in public schools, institutions for defectives, reform schools, juvenile court, and police court were sufficient evidence of the intrinsic worth of the method. Also, unlike Binet and Simon, whose overall goal was to identify less able school children in order to appropriately place them in the least restrictive environment, Terman used the IQ test to track children in a vocational track that suited them. Terman believed I.Q. was inherited and the best indicator of an individual's success in life.

Terman, Cubberley and Intelligence Tests (1915-1916)

In 1916, Ellwood P. Cubberley, an education administrator at Stanford University and former Superintendent of Schools in California (1896-1898), and editor of Terman's 1916 study, *The Measurement of Intelligence: an Explanation of and Complete Guide for the Use of the Stanford Revision and Extension Scale,* invited Terman to Stanford University as a professor in 1910. Cubberley hailed Terman's intelligence test or mental test study as the most significant book of educational theory and practice of that error. Cubberley endorsed Terman's studies as a very important tool for public schools to carefully measure the intelligence of children, and espoused that only in the past 6 years had scientific work begun to appreciate fully the importance of the intelligence test as a guide for educational procedures.

According to Cubberley, until Terman's revisions, intelligence had been a new concept in the psychology profession. Cubberley reported that Terman's Binet-Simon revision was a valuable tool for guiding students in their choice of study, vocational guidance, classroom procedures, grading, and promotions as well as for the proper

handling of retarded and gifted children. Cubberley believed that Terman's intelligence test provided necessary information to determine a student's future mental growth in order to guide future educational or vocational goals most profitable for the individual. Cubberley confirmed that Terman's test was a revision and extension of the Binet-Simon scale for measuring the intelligence of retarded children in comparison to normal children, yet Terman revised the test to American conditions and needs. Cubberley declared that Terman's test was an advance in educational procedure, and Terman perfected a measurement tool to evaluate educational practices resulting in diagnosing individual possibilities and needs. Cubberley predicted that the intelligence test would become a necessary routine in classroom procedure, and he recommended all administrators and staff be trained to administer the test. Furthermore, Cubberley suggested that Terman's book should be read by all physicians, social workers, teachers, and parents. The *Education Research Bulletin* published by Los Angeles City Schools recommended that the faculty and staff read Terman's study.

In 1915, Cubberley, Terman, and Jesse B. Sears, a faculty member in the School of Education at Stanford, conducted a study in Utah titled, *Report of the Survey of the Public School System in Salt Lake City*. Their survey indicated that the students were of excellent racial stock, meaning that 78 out of 100 of the students' parents were born in the United States. They also noted the city's population also included the best foreign stock in America: Western European. Cubberley concluded from this study that problems in public education were social and economic, and the poorest performing students were either African Americans or foreigners who populated the poor areas of the city. He

compared Salt Lake City's economic conditions to Los Angeles, a city of the middle class, which should have made it easy to maintain a quality school system.

In 1916, Terman identified a child's age as being of a mental age of 10.8 and I.Q. of 75 and 80 despite his father's attempt to give him a good education. Terman (1916) described the child's perfectly normal appearance and social interactions with other children. However, the child in Terman's opinion would never rise above being a laborer or develop a mental age past 11 or 12 years of age, similar to Negro recruits examined by Terman's Alpha Army Test. Terman surmised that individuals like M. P. "are the world's hewers of wood and drawers of water" (p. 91). Terman concluded that children like M.P. were uneducatable and no amount of instruction would make them competent voters or citizens. In short, Terman reported:

> The level of intelligence depicted by Spanish-Indians and Mexican families of the Southwest, and also amongst Negroes have a dullness of intelligence which serves to be racial or inherent in the stock from which they come. The frequency of dull intelligence suggests a strong indication that mental traits and race correlates. Dull normals (I.Q. usually range between 80-90) on the Binet-Simon Scale. However, in the Spanish-Indians, Mexican and Negro group are children who would not be considered feeble-minded, but are far enough below the average intelligence of Western European decent that they cannot make ordinary school progress or master intellectual difficulties which average children are equal to.

> A few of this class test as low as 75 to 80 I.Q., but the majority are not far from 85. The unmistakably normal children who go much below this in California, at least are usually Mexican, Indians, or Negroes. (pp. 91-92)

Terman reported that M.P.'s (initials to secure the participants' identification) condition was prominent amongst Spanish-Indians, Mexicans, and African Americans, and he found that such groups were naturally low intellectually by inheritance from their ancestors. He supported his analysis with the frequency in which he had observed low intellect in such races. Terman further concluded that Indians, Mexicans, and African Americans should be segregated in special classes and taught only concrete concepts void of abstract knowledge to create efficient workers. The average Negro boy in his observations scored in the age range of 13 and 5 months produced an I.Q. of 80 with normal appearance. As indicated on Terman's scale, an I.Q. of 80 is dull/normal. Terman admitted there was no way to convince society that such races should not be allowed to reproduce; however, through his eugenics lens, they posed a problem because of the their reproduction rate.

In 1922, Alfred G. Lawrence, MD, LLB, PhD, Major in the Medical Reserve Corps, and adjunct professor in the subject of nervous and mental disease attended a scientific session of the Society of Medical Jurisprudence. At the 320th proceeding of their regular meeting, Lawrence presented, "The Employment of Intelligence Tests in Control of Immigration.," an article in which Lawrence explained various factors pertaining to the admission of aliens or foreigners into the United States and the degree of crime, insanity, mental deficiency, educational retardation, vocational inefficiency,

heredity abnormality, and economic dependency they brought to the nation. He claimed that this infiltration of immigrants was a difficult problem and noted the extent that intelligence tests were being used to aid in solving the problem. He made the point that the intelligence tests were a solution to the immigrant problem by weeding out those whose intelligence was not sufficient at a vocational level. Lawrence surmised that once the intelligence of an immigrant was at this level, they could become good citizens and become successful economic assets instead of liabilities or an expense to their new communities.

Lawrence also explained the importance of the Alpha Army Test, which was the revised Binet-Simon test by Terman; Stanley G. Hall, President of the American Psychological Association and Darwinist; Edward Thorndike, educational psychologist at Teachers College; Gary Wells, Whipple Psychologist at Teachers College, Columbia University; and Robert Yerkes, a psychologist and a fellow eugenicist along with Terman in 1921. Lawrence referenced Terman and Yerkes's study in his presentation to the Society of Medical Jurisprudence and described their participant pool of 750,000 men who were drafted into the U.S. Army. Terman reported that the intelligence tests found 50% of the army recruits were 12 years or less in mental age. However, officers and special detail men enlisted were quickly and efficiently identified by their high scores on the intelligence tests. Lawrence further described how the Alpha Army intelligence tests were used to determine superior, normal, and retarded intelligence in children for vocational purposes, and an economic value to the education system.

African Americans and foreigners failed the Alpha Army Test at such a high rates

that a performance test and a literacy test were created by Terman and Yerkes in 1917 to identify the mental age of illiterates and non-English speakers. After focus studies were conducted to determine the high rate of low scores by African Americans, it was determined by Camp Mead and Camp Gordon in 1918 that the intelligence tests were poor at differentiating grades of intelligence of African Americans. However, Camp Dix was satisfied with the results, which had indicated that the intelligence of Black recruits was measured as accurately as the White recruits. In the same report, the examiner indicated he was not satisfied with the low grades of intelligence of both Blacks and Whites indicted by the intelligence tests. The test took an hour to administer. The recruits earned scores of A-E. Recruits who earned an "A" were trained as officers, while "D" and "E," mainly Black and foreign recruits, would never receive officer training.

Eventually, the Army conducted a statistical analysis which compared the amount of education of recruits in relation to intelligence. This discrepancy was identified by Binet in relationship to the Binet-Simon scale. The discrepancy did not deter Terman from revising and using the scale on Blacks although it was determined not to be a valid measurement tool for populations outside of the norm group demographic by the creators, Binet and Simon. The Binet scale norm groups were children of middle class, Western European descent (Terman, 1917, p. 29). Terman found that students who scored between 80 and 90 were dull/normal. Terman used his newly developed Stanford-Binet scale to measure children's intelligence in California, particularly Mexican, Indian, and Negro children, all of whom scored far below the average intelligence of Western European middle class children. Terman (1916) observed children of European descent in

California tested comparably higher than the aforementioned minorities. Terman concluded that Negro boys would never progress over the mental age of 12, which correlated with his findings in his 1922 Army Alpha Test studies, which was discussed in a previous section.

The army researchers determined to learn the degree of schooling attained by men in the army and to discover as far as possible any dependence of schooling on intelligence. Each racial group's years of education were recorded and sorted by intelligence scores (see Appendix B). The table lists the distribution of schooling among officers and recruits disaggregated by race, citizenship, and location of recruitment. The following observations were recorded using the Stanford-Binet scale mental intelligence for years of schooling: the better educated the group, the better the intelligence rating; the Northern Negro recruits were better educated and more intelligent than the Southern Negroes; the Northern Negroes were better educated but less intelligent than the foreign Whites. Several investigations were conducted to quantify the percent of schooling (see Appendix B). Once lack of schooling or illiteracy was determined, Negroes took the Beta Examination or the Performance Examination used for non-English speakers.

Examiners reported that the Beta test was not as satisfactory a literacy test for Negroes as it was for foreign Whites. They determined it was too difficult to keep up with the Negroes' interests to keep them engaged in the process. The illiteracy rate varied from state to state, but illiteracy was so high in South Carolina that the examiner doubted the test's accuracy. Illiteracy rates of South Carolina recruits was measured at 61.6%. The examiners were especially startled by the 40% illiteracy rate in Virginia amongst

Negroes. The years of schooling table (see Appendix B) identified Negro recruits as the least educated even though they were brought up in the United States where elementary education is free and compulsory. The southern Negro illiteracy rate was approximately 19%, while northern Negroes were about 17% illiterate. More than half of the Negroes from the south had not gone beyond the third grade and only 7% had finished the eighth grade.

Intelligence Tests and School Reorganization

In 1923, Sutherland, Terman, and Tupper collaborated on several studies that resulted in a publication titled *Intelligence Tests and School Reorganization.* The purpose of their book was to expose the condition of the public school system to superintendents and offer intelligence testing as a scientific remedy to school reform. Terman's article argued that lack of uniformity in the mental abilities of students dictated a need to identify their mental age to create groups of homogeneity, adequate grading scales, and individualized instruction. Tupper, Superintendent of Schools in Miami, Arizona described the process of decreasing economic and intellectual waste as a result of the excessive retardation of 750 Mexican nationals in his school district. Thompson of Stanford University and Los Angeles City School Psychology Department and an understudy of Terman's, was hired to coordinate Tupper's intelligence testing program. A specialized curriculum was developed for Mexican students because they were lagging behind the other groups; statistics showed they tended to drop out before high school. Southerland was the director of the Department of Psychology and Educational Research in Los Angeles at the time whose focus was individual instruction for misfit children in

Los Angeles. He surmised that curriculum should be thoroughly standardized according to difficulty for the different mental age groups.

In 1922-1923, Los Angeles led the intelligence test movement with the collaboration of Stanford University professors and students: Terman, Yerkes, Thompson, Sears, and Cubberley were the visionaries of psychology. In short, they used intelligence tests to identify the gifted, normal, and low students of all races, which was diametrically opposed to Binet and Simon's intent. The army's need for a swift and practical test transformed into the school districts' need for the same type of test. The Rockefeller Foundation donated $25,000 to start the National Research Council that developed the National Intelligence Test designed for grades 3-8. After intelligence tests became nationwide phenomena, Terman declared in his articles that intelligence testing was there to stay, and to interpret the testing movement as a passing educational fad would be a serious mistake. He declared that intelligence tests had been deemed a reliable and valid tool that measured the intelligence of unselected school children. He urged the educational leaders and community alike to take student differences into account when curriculum making and to classify students for instruction and vocational guidance purposes. Terman saw testing a necessity for adjusting curriculum and grouping students based on intellectual differences. His subcommittee's report to the NEA Commission on the Revision of Elementary Education found mental test results necessary for school to account for native intellectual differences.

Policies and Practices Enforcing Tracking (Late 1800s and Early 1900s)

In 1922, The High School Research Bulletin of Los Angeles City Schools confirmed that the most important function of the Department of Education Research was educational and vocational guidance. The editor explained that intelligence tests were a great advantage to be used for vocational and educational guidance. Classroom and course assignments were determined by both intelligence and educational tests. The test aided in formulating equal intelligence groups, which could be adjusted and readjusted as necessary for the welfare of individual students. The research department school psychologists were eager to assist in testing levels of general intelligence and to identify special abilities to determine which information could be used for placing pupils in vocational levels. These psychologists also used the Alpha Army Test results to advise students on vocational education choices, according to the editor of the Education Research Bulletin and director of the school psychology department, H.M.W. (Education Research Bulletin, 1922).

In 1922, Arleigh C. Griffin, editor of the *High School Research Bulletin*, stated that the purpose of the bulletin was to promote educational research and scientific study amongst high school workers of Los Angeles. The *High School Bulletin* served as publicity for the High School Research Council. Teachers were appointed to the research committee as well. The research cabinet included the director of high school research and members of his staff including psychologists, teachers, and administrators. The purpose of the cabinet was to discuss all the pieces of high school research undertaken, to aid the

school staff in making plans regarding education, and to train research workers to solve the problems high schools faced.

In 1922, Dr. Bobbitt's study *Curriculum Making in Los Angeles* was a major influence in reformation of Los Angeles Schools with the help of the new High School Research Department. Bobbitt concluded that mathematics should be differentiated between vocational and general training. Vocational mathematics should not be permitted to dictate the content of general training courses. The Los Angeles City Schools decided that vocational students did not need algebra, geometry, or trigonometry and that vocational students only needed intensive training in mathematics associated with their vocation. Bobbitt recommended that only college bound students needed to take courses such as algebra, geometry, or trigonometry mainly because colleges still used these courses for student selection purposes. Specifically, Bobbitt recommended applied arithmetic and simple calculations for vocational students who were graded based on their natural aptitude, capacity, or interests. At this point, guidance counselors were hired to evaluate and advise students to pursue academic or vocational goals based on each student's ability and personal characteristics.

Like Snyder, Commissioner of Industrial and Vocational Education in California, and Cubberley, Superintendent of California Schools Bobbitt strongly advised that vocational education be implemented separately from general education. Bobbitt argued that the education system in Los Angeles was basically guided through hypothesis and assumption rather than real scientific data and that curriculum based on characteristics and ability should belong to well-developed individuals. He argued that education should

only address native ability and only in homogeneous learning environments. Bobbitt concluded that only abilities of students with the same native capacity resulting from social, geographical, or vocational situations should be addressed in curriculum making. Dr. Sutherland, director of the Department of Psychology and Educational Research in Los Angeles, concurred with Bobbitt's findings. He concluded that after making allowances for the heredity factor, the education of any person should be determined by his or her experiences.

In 1923, the *High School Research Bulletin* published a study which measured mental age rating and vocational guidance at California Polytechnic School. Mental tests were given to every student, the results of which were then given to guidance counselors for academic or vocational counseling. The school guidance counselors kept personal cards that identified date of birth, nationality, intelligence achievement test scores, scholastic record, character rating, judgments by teachers, names and occupations of parents, vocational interests, and other miscellaneous information. The editor of the Education Research Bulletin recommended the school faculty read Terman's (1917) *The Measurement of Intelligence,* Cubberley's (1920) *School Organization and Administration*: *A Concrete Study Based on Salt Lake City School Survey*, Seals's (1920) *Boise Survey*, Terman's (1919) *The Intelligence of School Children*, and Whipple's (1919) *Classes for Gifted Children.*

In 1923, the Terman Group Mental Test was given for the first time to students at San Pedro High School in Los Angeles by a faculty member. The students were classified based on the results of the test. In June of the same year, a principal administered the test

and also classified students based on the results. Some counselors, but mainly teachers, administered the test. When indicated by the test, slow learners or misfits were assigned to one group for instruction below grade level standards created by the teacher. Teachers believed the test built up self-reliance and morals when students were learning as along with their classmates. The school argued that failure was due to the fact that teachers are trying to teach children something they should never learn. Some teachers believed with grouping there would be no failures and courses structured to meet student needs would result in group success. The principal at San Pedro High School in 1923 argued that intelligence tests were a source of scientific data that assigned students to the right classes to relieve teachers of their burden of teaching to those of several kinds of intelligence in one classroom. The principal explained that students would return to regular class when they were ready, and there were usually one half day of remedial classes and one half day in regular classes. Parents and students could not request a change from one group to another; only teachers could. The groups were not closed groups, so no child should have felt the stigma of mental deficiency.

From 1922-1923, a quantitative study was conducted at Sentous High School in Los Angeles. A small group was given the Terman Group Test in English and Math to track them in advanced, average, and slow groups. Students classified as A7s (low 7th graders), B7 (high seventh graders), and A8 (low 8th graders) were used as the Terman Test norm groups for all intelligence testing at Sentous High School. Teachers conducting the test expressed that testing was a pedagogical aid. Boyle Heights, a school

in Los Angeles, tested B7 students to identify their mental ability and intelligence quotient. The students were classified in one of eight groups (Table 1).

Table 1

Boyle Heights Intelligence Testing Results

Classification	Intelligence Quotient	Mental Age
Very Superior	123 plus	13-16 plus
Superior	114-122	12.11yrs to 13.5 yrs
Fast Average	105-113	12. 6 yrs to 12.10 yrs
I Average	101-104	12 to 12.5
11 Average	94-97	11.9 to 12.4
Slow	82-88	11-1 to 11-4
Very Slow	Below 81	Below 11

Note. Adapted from Board of Education of the City of Los Angeles. (1923c). Los Angeles City High Schools. *High School Research Bulletin*, *2*(18), 2.

The teachers at Boyle Heights Junior High School adapted the student work based on group abilities. Also, they believed removal of slow students into groups by themselves prevented them from retarding the progress of others. The superior pupils were allowed to progress more rapidly in the enriched programs, while low students failed less. The study explained that the grouping was not permanent and students could transfer from one group to another if the students' academic weaknesses were strengthened or the teachers recommended change evidenced by educational tests. However, students who scored below 70 were placed in special classes and given an Individual Binet Test. There was no indication in this report on the effects of grouping for any of the students.

In 1923, a preliminary report concerning the mental age and educational tests of 500 Negro children in Los Angeles elementary schools from 1922-1923 conducted by

school counselors resulted in median I.Q. results of 104.7. The results were almost the same as the general population of 15 schools' median I.Q. results of 106. In 1925, the National Intelligence test was given to Mexican first grade students to understand how language affected the results of the intelligence test. It was found that language resulted in lower scores for foreign children. The same test was given in Spanish and in English, resulting in increased intelligence for Mexican children when taken in Spanish. The English version resulted in an average intelligence of 78.75 for Mexican students, which was the same score as for Mexican special education students. After the test was administered in Spanish, the scores increased to almost 100.25, which was the overall score of English speaking students; the increase nearly matched the English speaking population's intelligence test results. However, school administrators felt that Spanish speakers would make more gains if grouped in homogeneous classrooms. In 1925, Mexican students made progress well above expectations when the National Intelligence Test was given to the entire school of Mexican students. The first test revealed the student performing about 2.5 year on average behind the American populated schools. After the regular curriculum was given, the students made great gains. In June of the same school year, the students scored dramatically higher after subject-based interventions. The Mexican children's final mental age measurement increased by 2 years.

In 1925, the *Educational Research Bulletin* published an article explaining that many Protestants were supporting Catholic ideology from 400 years before. They described a secret organization with millions of members who were anti-catholic, anti-

Jew, anti-Negro, and anti-alien and who believed they were serving the public by preserving institutions by suppressing certain groups of peoples. In the same publication, Dr. Peterson contrasted the abilities of White and Negro children in his comparative psychology monographs. Dr. Peterson analyzed intelligence tests of 3,151 White and Colored children and showed a significant inferiority of Blacks to Whites.

In 1925, Terman created a measurement tool to decrease teacher bias in judging student abilities for track assignments and grading. In Los Angeles, school administrators were concerned with the teacher's ability to judge a students' intelligence, especially in schools with large populations. McCall developed a test to correlate student intelligence and teacher judgment. McCall found that teacher judgment and intelligence were low in correlation. The outcome influenced principals to solely use intelligence tests and negate teacher judgments for grouping purposes.

In 1927, Frank Freeman of Los Angeles Schools Psychology Department declared intelligence tests had revealed an enormous intelligence difference between individual students and groups of persons. Freeman concluded these differences were determined by heredity, explaining that a person was born with a given degree of mental capacity and the intelligence tests was an accurate measure of the degree of native capacity which a person possessed. Freeman admitted that education was at a crossroads of intelligence test interpretations. He further espoused that psychologists had reported that education was of little value except to enable the selection of high ability individuals and to put them in a position in which they could exercise their ability within their capacity. Freeman witnessed intelligence test outcomes under social scrutiny because the results

should have been open to various interpretations. Freeman further explained that wide differences identified between city dwellers and country dwellers, residents of different states, and various classes of immigrants and races depicted no absolute finding: the differences were due to inheritance rather than training.

In 1927, an example of vast intelligence test differences was identified through the Alpha Army Test. The test scores of enlisted men varied widely. Officer groups scored well based on educational backgrounds. Overall, the majority of officers finished high school and had some college experience. A study conducted by Yerkes found that native capacity and native ability was influenced by home environment, training, and education. During 1923 and 1927, education was reduced to a testing bureau supported by psychological research teams, school boards, administrators, and teachers. They argued that if students could not increase their intelligence then they should not persist or strive to do better. Students should settle their ambitions based on the intelligence test measurement outcomes to avoid frustration or failure in unfitted academic or career pursuits. Some teachers felt a relief from high expectations and the appearance of ineffective methods of teaching. Teachers could blame the student's inability to learn rather than ineffective teaching and learning methods.

Between 1923 and 1927, the massive influx of minority students into public schools became a problem in schools at large. Findings showed that minority students were more likely to be assigned to vocational education than advanced classes geared toward college entrance. The testing program aided in identifying less intelligent students for placement in vocational education. Chronologically, key legislative funding, public

discourse, and the scientific research movement in education directly impacted tracking policies and student assignments. Intelligence testing became the vehicle for sorting students into high, medium, and low tracks. Based on the historical evidence collected, two distinct thematic time periods developed: (a) the Smith Hughes Act of 1917 source of vocational education funding by federal state government and (b) the scientific research in education movement that was the measurement used to sort students in high, medium, and low tracks. Evidence supported that intelligence test norm groups did not include minorities, identifying them as less intelligent and thus assigning these students to vocational education at a higher rate than that of their White counterparts.

Tracking was enforced by scientific research groups, school boards, and administrators. The early 1900s marked the time period that state legislation approved intelligence testing that sorted students into homogeneous educational tracks.

The Effect of Contemporary Tracking Policies on Practice (2006-2009)

The California School Board Association supplied the Los Angeles School Board Association with sample policies online for a fee on a dedicated website that can be found at www.Gamutonline.net. The CSBA Sample Board Policy, entitled "Instruction-Class Assignment BP6152 (a)" stated, "The following policy is optional and should be modified to reflect district practice" (See Appendix C). The CSBA policy was written as follows:

> The Governing Board believes students should be assigned to classes and/or grouped in a manner that provides the most effective learning environment for all

students. When assigning students to specific classes, the principal or designee may consider the following criteria:

1) Staff recommendations, including, but not limited to, the recommendations of teachers and counselors
2) Skills and classroom management style of individual teachers
3) Student skill level as indicated by achievement and testing data
4) Grades, Evaluation of Student Achievement, Standardized Testing and Reporting Program Testing
5) Student/teacher ratios and if relevant, class size reduction considerations

The principal or designee may accept from parents/guardians any information which would be helpful in making placement decisions. However, a parent/guardian who provides such information shall be informed that a request for a specific teacher shall be one of the many factors which may be taken into account when determining his/her child's placement (see original in Appendix D).

The Class Assignment Policy may be accessed in California Department of Education, Curriculum and Education www.cde.ca.gov/ci or the National Association for Education of Young Children at www.naeyc.org, and Elementary Makes the Grade 2000. The policy was updated in 2011 and is the property of the California School Boards Association, including graphs depicting certain Los Angeles Schools and their interpretation of the class assignment policy. The policies were listed on the school's website and were enforced by the school boards and administration. The policy was

modified by some schools or kept exactly the same as the Board of Education recommendations.

The aggregation of Class Assignment Policy BP6152 between 1996 and 2009 listed 22 schools located in Los Angeles, California (see Appendix E), showed evidence that 40% of the schools boards adopted the class assignment policy which was indicated in the policy itself. Twenty seven percent used skill level, test scores, standardized test scores, grades, evaluations of student achievement, and a reporting program to help in determining class assignment; 9% used skill levels, test scores, evaluation of students and standardized test scores; 4% used skill levels, test scores, evaluation of students and standardized test scores and grades for class assignment; and 54% did not indicate any type of score. Placement decision makers identified by the data showed superintendents and teachers in 36% of the schools; teachers along with others in 95% of the schools; principals and teachers at 50% of the schools; principals, teachers, and guidance counselors at 40% of the schools; and principals and teachers and parents at 4% of the schools. Six percent of the schools did not list any information regarding decision makers for class assignment.

Aggregated data of classroom assignment policy for Los Angeles Schools also showed the number of schools that balanced groups of students with high, medium, and low skills at 100% and ethnic balance of 59%. The most telling part of the data is the indication that the school balanced their classes with high, medium, and low students, which suggests that each class would have all such students represented including ethnic balance. However, when schools use standardized testing to group students, they rarely

end up in an ethnic balance or a balance of high medium and low students. It seems as though there is a declaration of equal opportunities for all students, but a true undercurrent of tracking students into ability groups was indicated by tests alone. It is impossible to do both because minority students generally score lower on standardized tests than their White counterparts and if class assignment is based on such testing, then it is impossible to have a ethnic balance in the classroom. Placement readjustment decisions were made by superintendents and parents together 40% of the time; superintendent, principals, and parents 4% of the time; and principals and parents combined 54% of the time.

Data were compiled to reflect the number of minorities in advanced classes compared to vocational education and the number of White students assigned to advanced classes compared to those in vocational education in 1995-1998. These years are represented in the data because they were the only years that identified vocational education assignments included in the California Longitudinal Pupil Achievement Data System's (CALPADS) historical data. In all the years combined from 1995-1998, 800,000 Hispanics were enrolled over the course of 4 years and represented 11.2% of those enrolled in vocational education, 5.6% in algebra, 4.3% in advanced math, 5.3% in chemistry, and 2.6% in physics. Black students enrolled in Los Angeles Schools between 1995-1998 totaled 1,379,389, of which 6.9% were assigned to vocational education, 2.6 were assigned to algebra, 2% were assigned to advanced math, 2.6% assigned to chemistry, and .09% assigned to physics. Out of 386,383 White students, 20% were assigned to vocational education, 8.3% to algebra, 8.8% to advanced math, 8.3% to

chemistry, and 4.2% to physics. General education classes and remedial classes were not part of the data available on the CALPADS website.

Summary of Findings

Lewis Terman forwarded the scientific education research movement by using Los Angeles City Schools' students in his pilot studies. His study of mental intelligence was supported by his Stanford University colleagues who also secured employment in the Los Angeles City School Education Research Department. Terman and his colleagues facilitated the use of intelligence tests in Los Angeles school with the approval of the school board, administrators, and some teachers. All teachers were not convinced that intelligence testing was the best solution to student failure in high school. There was no study found that indicated Los Angles City Schools knew of Terman's eugenics background. Neither unrelated norm group demographics nor correlations between years of education and mental intelligence, as indicated by Terman and Yerkes's study of military recruits, deterred Los Angles City Schools' adoption of Terman's Mental Test Scale. Still, the Education Research Bulletin editor published Terman's studies as recommended reading material for the Los Angeles School faculty.

Intelligence testing became a traditional means of sorting students in high, medium and low tracks beginning in 1923. Students who were identified as high ability were tracked into class required for college entrance, while students identified as low ability were tracked into remedial classes or vocational classes to prepare them for low level industrial jobs. Several prominent education researchers, identified in the previous section, argued tracking would lead to a stratification of social classes along with

systematic segregation through the vehicle of perceived intelligence (i.e. Dewey, Davenport, and Eliot). Eliot and Dewey also espoused that enriched instruction for all students would solve the high rate of failure in high schools. The High School Research Bulletin published snippets of discourse regarding the undercurrent of the intentional suppression of minority students by certain protestant groups, but no in-depth documentation was found except for Terman's studies.

Los Angeles City Schools adopted Terman's mental tests in 1923 and countless others afterwards. From 1996-2010, standardized test scores were used to track students into high, medium, and low tracks resulting in continued student segregation by race. A distribution scale of advance track assignment of Black, White, and Hispanic students from 1995-1998 determined that Blacks and Hispanics were still underrepresented in the advanced tracks in Los Angeles. Non-conforming data identified in the same distribution scale found White students from 1995-1998 were overly represented in the vocational education track. The findings indicate the need for an extension study to determine the class assignment of students across the general education curriculum. This study may explain the social importance of each subject in a certain time period.

Chapter 5: Summary, Conclusion, Recommendations

This chapter is divided into three primary sections. The first section is a summary of the purpose, theoretical framework, research problems, and method followed by an interpretation and analysis of the findings. The research questions are answered by five themes which are threaded throughout the historical data: Late 1800s and early 1900s; Vocational Education Movement, 1917–1923; School Efficiency and Scientific Reform Movement, 1923-1927: Ability Group Movement Based on Intelligence Measures, 1996-2010; and Contemporary Tracking Policies. In the final section, recommendations for action, recommendations for further study, implications for social and educational change, and the conclusion of the study are presented.

Summary

Purpose of the Study

The purpose of this study is to develop an historical overview of the origins of tracking in a school district on the West Coast and the policies and practices that supported it from 1923-1927 compared to 2006-2009. Tracking is one of the major concerns of education reformers today. An in-depth understanding of the origins of tracking and the policies that support tracking will help educational policymakers understand how and why tracking was developed, and how it currently affects minority students' educational access. The study contributes to the body of literature that supports the need to detrack public schools and allow equal educational opportunities for minority students. Such opportunities can only be granted by class assignment policy changes and a change in educational philosophy support by school boards and administrators. Most

access to enriched educational experiences is offered to students in higher tracks determined by standardized testing; thus, other students have limited access.

Theoretical Framework

The critical race theory supports the significance of an historical analysis of tracking as it relates to a systemic undercurrent of unequal access to enriched curriculum by minority students as a result of tracking. Critical race theorists investigate aspects of society, institutions, schools, and classrooms to narrate the functions, meanings, causes, and consequences of educational inequalities based on race. These theorists identify ideologies and stereotypical impressions that are imbedded in the educational system (Gay, 2000; Lasdon-Billings, 2006). Ladson-Billings (2006) focused on three dimensions of the critical race theory, surmising that (a) race continues to be significant in the United States, (b) American society is based on property rights rather than human rights, and (c) the intersection of race and property creates an analytical tool for understanding inequities. Critical race theorists continue to highlight oppressive, social, and intellectual myths that lead to lower educational expectations and outcomes for minority students (Martin, 2009).

Many researchers have noted the benefits of detracking public school. Jeanne Oakes led in the call for detracking in Los Angeles schools. Oakes' studies on the tracking phenomenon and its effects on minority students were also performed through the critical race lens. In her historical and longitudinal seminal studies an undercurrent of inequality was found in a system in which the public espouses equal opportunity for all. Oakes' prior studies supported the need for detracking to have truly equal opportunities

for every student in public education. Oakes' studies showed a disproportionate number of minority students placed in low tracks with no real way out once they are assigned, resulting in a remedial education and limited opportunities for pursuing academic career paths. Oakes's (1987) study revealed that grouping had no positive impact on high ability learners. Her analysis also found a slight decrease in self-efficacy for high ability learners who are grouped with like ability students.

Methodology

Data were collected from historical archival databases, the California Longitudinal Pupil Achievement Data System (CALPADS), and Los Angeles County school websites. The research questions guided the data search and the selection of sources used. Specifically, archival data based publications on the topic of vocational education and intelligence testing was synthesized to answer research question 1: What is the historical relationship between vocational education and tracking? At the same time, numerous studies on the constructs of vocational education and the useful integration of intelligence testing that the Education Research Bulletin of Los Angeles City School had published answered question 2: What policies and practices enforced tracking in the late 1800s and early 1900s? Research question 3: What are contemporary tracking policies and how did they affect tracking practices in 2006-2009? was answered mainly by analyzing and categorizing CALPADS disaggregated data reports from 1995-1998 published on the California Department of Education website, which was used to form Appendix E. Appendix D also shows the demographics of students assigned to vocational education or higher tracks based on standardized tests and other policies. Research

question 3 is also answered by the class assignment policy charter in Appendix D. Twenty-one Los Angeles School policies are depicted in Appendix D to show the stratification and commonalities of tracking policies.

An analytical narrative of historical discourses as they relate to the educational opportunities of African Americans and immigrants in the past and present were compared in the final analysis. An interpretation of events and an explanation of why they happened along with assumptions and forces that influenced the process Los Angeles County schools were drawn to a conclusion by using systematic detailed note taking on identified themes and handwriting notes to connect individual arguments. Each EndNote entry included a summary of the article and was categorized based on the theme. The entry was flagged for easy access as a subtopic for various themes as each subtopic was revealed. Notes on related topics were saved under a specific heading in the EndNote program. The main points were listed first to be able to identify principal themes easily. Key words were listed in bold for quick location of specific topics and then classified. Important points were underlined. Quotes or paraphrases were placed within brackets to avoid confusion between my comments and quotes. The purpose of these coding techniques simply enabled me to identify and classify easily the content of my research notes to use effectively in the findings chapter.

Interpretation of the Findings

The vocational education movement was supported in public education partly because of the desire of Americans to compete in the global industrial market with other western countries. However, the education system itself became the vehicle used to

forward the movement. The need for trained industrial workers and society's need for jobs morphed into a dual system of education similar to the European education system. One injustice that a dual system of education promotes is lack of choice. Normally, once individuals are assigned to a career, academic, or vocational path, they are not able, prepared, or encouraged to change routes and experience various educational options if they so desire. The tracking of immigrants and minorities into the dual system of education became a one way path determined by intelligence test results.

The beginning of mental tests for intelligence determination was an honorable one. It was developed out of concern for students with learning disabilities or signs of retardation. It was designed to determine appropriate placement of such student to support future functionality. However, like the dual system of education, intelligence testing became a measurement tool used for sorting purposes to determine superior or inferior intelligence in individuals. Beginning with the Alpha Army Test norm group used in the preliminary studies, the participants were children of European descent from middle class families. Despite the fact that Binet, the originator of the mental test, identified, published, and determined his test to be used only to measure the intelligence of groups with like demographics to dispel the environment argument, Terman still used the test to measure diametrically opposed racial groups. It is not surprising that it was found that individuals whose background and race closely resembled the norm group scored higher on the mental tests that those who did not.

Leaders in the army realized the discrepancies and began to measure the amount of education recruits experienced disaggregated by race, army rank, and the Binet-Simon

mental test outcomes. Although access to education and mastery of the English language were factors that resulted in low test scores, Terman and Yerkes continued to use the test to classify recruits into jobs and then revised the scale to sort school children into educational or vocational paths. This background information is important when testing children's intelligence because the outcome may be invalid for certain demographics and may be used by school personnel to advise students into courses based on perceived ability opposed to their actual intelligence. School boards and administrators in the early 1900s were so eager to be relieved of: students with little education, English language learners, and students who exhibited diverse learning styles that the developers' motives were not challenged enough.

Class assignment policies were analyzed to determine if tracking policies have transformed over 70 years. The answer is no. Students are still tracked based on perceived ability and standardized test outcomes. Minority students are tracked disproportionately into low groups based on test scores. The education policymakers have not determined that: standardized testing should only determine the lack of educational background a person may have, intervention strategies should be the result of the test's outcome, and education inequality gap should be filled through much needed enriched educational experiences similar to the experiences of students in advanced classes.

The Historical Relationship between Vocational Education and Tracking

The vocational education movement in the early 1900s transformed into an integrated vocational and academic public high school around 1917. Its integration into public high schools in 1917 was meant to alleviate the problem of unskilled workers

during the Industrial Revolution era. Prior to 1917, numerous associations, organizations, and prominent researchers such as the National Education Association, the Committee of Ten, Senator Hoke Smith, the Douglas Commission, the Commission on Industrial and Technical Education, the National Society for Promotion of Industrial Education, the American Federation of Labor, the National Association of Manufacturers, the U.S. Chamber of Commerce, the National Democratic Party, the Progressive (Bullmoose) Party, the American Home Economics Association, and even President Roosevelt voiced their concerns about the vocational education system in the United States.

Around 1912-1913, prominent education researchers joined and influenced the vocational education discourse at the onset. John Dewey, Edwin Cooley, and George Kerschensteiner all focused on three challenges that led this discourse: (a) the societal advantages and needs of vocational or industrial education, (b) the advantages of combining vocational education and public general education to develop the whole child, and (c) the divisive nature of separate vocational and general public schools. After decisions were made as to why, where, and how to implement vocational education into the education system, financing the program became the next topic of discussion. In 1892, Senator Hoke Smith began to use his political connections to support the Smith-Hughes Act of 1917, which resulted in federal funding for vocational education. Leading manufacturers, community leaders, laborers, and social science scholars supported vocational education with government financial support. They viewed the new funding mandates as a victory for America and its role in the industrialized world.

Although leading educational researchers saw vocational education as a path toward American advancement, they also warned against sorting students in vocational education to serve the needs of manufacturers and industrial businesses. However, almost immediately students who were from poor backgrounds and had limited formal education were targeted for vocational education programs. The Commission on Industrial and Technical Education's report identified two types of workers: low grade and high grade. Children ages 14-16 without formal education and those who were elementary school drop-outs were considered low-grade limited intelligence workers. These children welcomed the opportunity to learn a trade and make a living to help their families and themselves. Nevertheless, Dewey knew that this dual system of education in the long run would only benefit manufacturers' need for laborers and not the child's need for democratic experiences outside of a vocation. At the onset, the vocational education law stipulated the States should include these mandates: (a) cities and towns had to create vocational schools at their own expense, and (b) only parents can voluntarily enroll their children in the programs along with continuance of public school attendance (Report of the Commission on Industrial and Technical Education, 1906). However, as the statue attracted nationwide support, financial responsibility and parent consent requirements changed to perceived intelligence based on administrator and teacher recommendations, and later Terman's mental tests.

Appendix A shows the original plan of the dual system created by the Committee of Industrial Education and presented to the National Association of Manufacturers in 1915. The committee saw the dual system as a choice given to the working man to chart

his own course, whether it was vocational education or an academic path. The data showed various routes that involved evening school, continuation school, university extension, apprenticeship programs, efficient industrial intelligence, and specialized apprenticeships, leading to the university or business. These routes to secondary education in conjunction with a specialized trade were ideal for the working man. However, Dewey's fear revolved around the social separation and tracking method that led into the vocational system with no chance of crossing over into the other. Dewey saw this type of dual system as the foundation of segregation between the rich and the poor and the educated and the skilled. He believed that a truly democratic system supported both vocational and academic pursuits under one roof and allowed the students to transfer in and out of each program at will.

Policies and Practices Enforcing Tracking (Late 1800s and Early 1900s)

Lewis Terman was an American psychologist known as the pioneer of education psychology at Stanford University around 1910. He was also a prominent eugenicist and member of the Human Betterment Foundation, a principal, and a professor in Los Angeles County Schools back in 1905. Terman led the scientific education movement in education, in which data were not looked at merely to drive instruction, but rather to track students in vocational or academic pursuits based on perceived intelligence. School psychologists and counselors became the facilitators of tracking, while school boards constructed policies. At the same time, teachers and administrators administered mental tests in the hope that teaching homogeneous groups would produce less student failure and simplify curriculum and instruction for each group. In short, administrators hoped

that the quality of education would increase and problems in the classroom would decrease by teaching only homogeneous groups.

In 1923, Los Angeles City Schools began administering an I.Q test for tracking purposes to each child entering high school. Terman, Bobbitt, Cubberley, Thorndike, Whipple, and Thomas were all colleagues known as prominent experts at Stanford University in California who greatly influenced the intelligence testing and tracking programs in Los Angeles Schools as well as heading the education research department in Los Angeles Schools. Although many findings have been identified in Chapter 4 regarding the validity of the intelligence test, school boards adopted testing programs without question. Even though Terman and Yerkes were publicly known as eugenicists and Hall was publicly know as a Darwinist, their belief systems went unchallenged along with the demographics of the participant pool used to formulate their mental intelligence tests.

Terman and Yerkes's revision of the Binet-Simon scale into the Alpha Army Scale, then further revisions transformed the Alpha Army Scale into the Stanford-Binet Scale. The Los Angeles Education System used both the Alpha Army Scale and the Stanford-Binet Scale, which resulted in students being tracked into high, medium, and low groups. The need for laborers eventually transformed the low group into vocational education. Because minority students were at a noted disadvantage when taking intelligence tests, especially high school students who entered with limited education or limited language acquisition, their low test results became a tool used by guidance counselors to recommend vocational placement. Appendix B represents data collected by

Terman and Yerkes's examiners in the United States Army. The examiners noted the high rate of Blacks failing the Alpha Army test and decided to correlate the results of the years of education. Appendix B illustrates the stratification of education between White citizens, White foreigners, Negroes from the North, and Negroes from the South. It was clearly noted that educational background influenced test results. With such stratifications being the case, Terman proceeded to sell the Terman Group Intelligence Test, renamed the Alpha Army Test.

Appendix B depicts the percent distribution of schooling for officers and recruits. Traditionally, White native born recruits scored highest on the Alpha Army test with approximately 75% of the officers having college experience, 5.5% of White native born recruits having college experience in general, and 67.2% who finished fourth through eighth grade. Northern Negroes had the second highest scores with approximately 2.7% with college experience and 61% with a fourth through eighth grade education. Next, 1.5% of White foreigners had college experience whereas 47.4% finished fourth through eighth grade; lastly .8% of southern Negroes had college experience and 41.1% finished fourth through eighth grade. The low education level of southern Negroes was surprising due to the belief that America's education system was free and compulsory. Officers scored highest on the intelligence test and usually had an educational background that included college. In short, the intelligence test or Alpha Army Test may have been successful in measuring school experience, but it was not effective in measuring intelligence. Although this information was common knowledge, school districts proceeded to use such tests to sort students based on perceived ability.

In 1922, The High School Research Bulletin of Los Angeles City Schools confirmed that the most important function of the Department of Education Research was educational and vocational guidance. The editor explained that intelligence tests were a great advantage to vocational and educational guidance. Classroom and course assignments were determined by both intelligence and educational tests. The test aided in formulating equal intelligence groups, which could be adjusted and readjusted as necessary for the welfare of individual students.

Contemporary Tracking Policies and their Effect on Class Assignment

The California School Board Association created and sold school policies to public schools for local school board adoption. Their business was to create general formats of school policies and sell them to school districts. There was no evidence of plans to ensure that such policies were effective for increased student academic achievement. From 1996-2009, it was evidenced in the data that adherence to tracking policy adherence was based on various perceptions, yet were mainly based on standardized test results (see Appendix D). California Department of Education tracking policies are vague and elusive, and each school interprets them differently. Further research is recommended on investing the seemingly disjointed use of tracking policies in Los Angeles, and how common detracking policies will aid the schools in a unified movement toward equal educational access.

Each year students from kindergarten through twelfth grade take standardized tests and the outcomes are used to place student in the seventh and eighth grades in high, medium, or low tracks. Elementary students receive intervention strategies if their scores

determine the need for such interventions. From 1923-1996, minority African American students, Hispanic students, and Native Indians were still three of the lowest performing subgroups on standardized tests.

Los Angeles County Schools continued with class assignment policies even though they did not increase the achievement of minority students. This investigation did not uncover revisions of tracking policies that would allow all students enriched educational opportunities until 2010, at which time the Los Angeles School District changed their class assignment policies to reflect the beginnings of detracking. The policy clearly mandates that all students should be assigned to grade level classes and taught A-G college entrance curriculum. School reform along with policies and practices designed to frequently gauge its effectiveness should be an integral part of the transformation.

Appendix F reflects the number of minorities in advanced classes compared to vocational education from 1995-1998 garnered from the California Longitudinal Pupil Achievement Data System (CALPADS) historical data. The data showed that minority students were less represented in algebra, advanced math, chemistry, and physics than White students whose rate was 40%–50%. However, White students were overly represented in vocational education compared to African American students by 13% and Hispanic students by 8.8%. The findings in Los Angeles Schools from 1995-1998 nullified the argument that minorities were overrepresented in vocational education programs in 1995-1998 due to vocational education assignments. The data revealed that

20% of White students enrolled in vocational education in contrast to 6.9% Black and 11.2% Hispanic students.

In summation, minority students are still unequally represented in advanced track classes that provide enriched educational experiences to which all students should have access. The 21st century education system should encourage students and ensure that those from all races can experience the quality of education that advance tracked students experience. Because some minority students have limited educational backgrounds, they experience limited curriculum throughout their entire educational experience, as determined by standardized tests. This study aimed to recap the beginnings of tracking and testing and the racial discourse that guided the scientific movement, which in turn resulted in an inferior educational experience for students of perceived inferior intelligence. Once educational policymakers understand how and why students were tracked in the late 1900s, they should change current tracking policies and practices to ensure all students have access to enriched curriculum.

Recommendations for Further Study

Future research in the area of tracking should focus on the specific effects of students in low and high track classrooms or policies that ensure that previous policies are truly effective in reforming school for improved success for students of all races. School boards should detail a policy that would look closely at every policy to ensure effectiveness, and if not effective, the policy should be revised and checked regularly for effectiveness. Seventy years passed before the Los Angeles School Board decided to change their class assignment policy. Tradition should never overshadow effectiveness.

Schools in Los Angeles County still track students without regard to the disadvantages tracking inflicts on low tracked students. California Department of Education tracking policies are vague and illusive, and each school interprets them differently. Los Angeles City Schools endorse a variety of tracking policies based board adopted policies, which are customized by the school district. Disjointed tracking policies and their in-school segregative nature warrants future investigation.

Reflection on the Researcher's Experience

As a racial minority who was educated in a Los Angeles City School and who took the intelligence quotient test, I may hold certain biases based my interpretation of those experiences. I repeatedly questioned my interpretation of the findings in an attempt to draw out any preexisting thoughts that may influence the manner in which I presented the findings. It is important that a fair account of history and an accurate interpretation of such history are narrated. A systematic classification process decreased the chance of bias and increased the identification of related themes which ultimately guided the research process. A margin of error in the misinterpretation of historical accounts was a possibility; however, a triangulation of data and use of primary historical documents published on trustworthy government websites assured a high degree of accuracy for the data.

Implications for Social Change and Recommendations for Future Actions

Education has always been a tool that allows individuals a range of future choices. The best education, however, opens doors to unique experiences reserved for the privileged. Presently, access to enriched educational experiences is limited to students in

higher tracks. If an education is truly a right, then a good education should also be a right. Here and now in the 21st century, minority parents and students should have access to equal educational opportunities.

The tracking was decided by policymakers then and now. School boards, administrators, policymakers, and testing programs are still used to determine track assignments. These findings should be submitted and reviewed by school board members, administrators, educational policymakers, and government agencies that determine tracking policies and procedures in Los Angeles City Schools. The study will aid such organizations in making informed decisions regarding tracking in public schools. The detracking of public schools in the 21st century may be a necessary step toward an equal and equitable educational system in Los Angeles.

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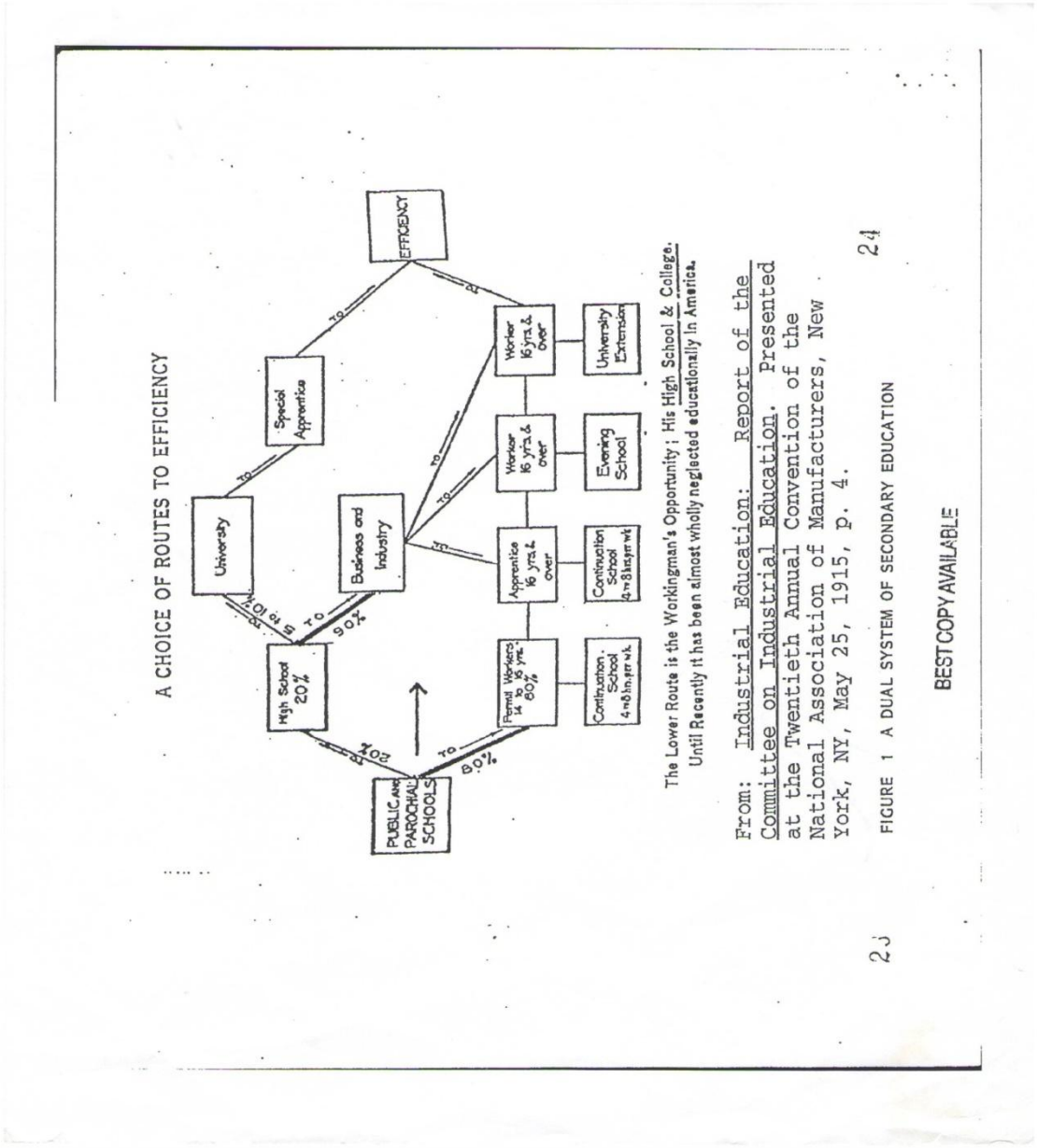
Appendix A: Dual System of Education



Note. Adapted from *Industrial education: Report of the Committee on Industrial Education* by National Association of Manufacturers, 1915, New York, NY: National Association of Manufacturers.

Appendix B: Army Recruits' Distribution of Schooling

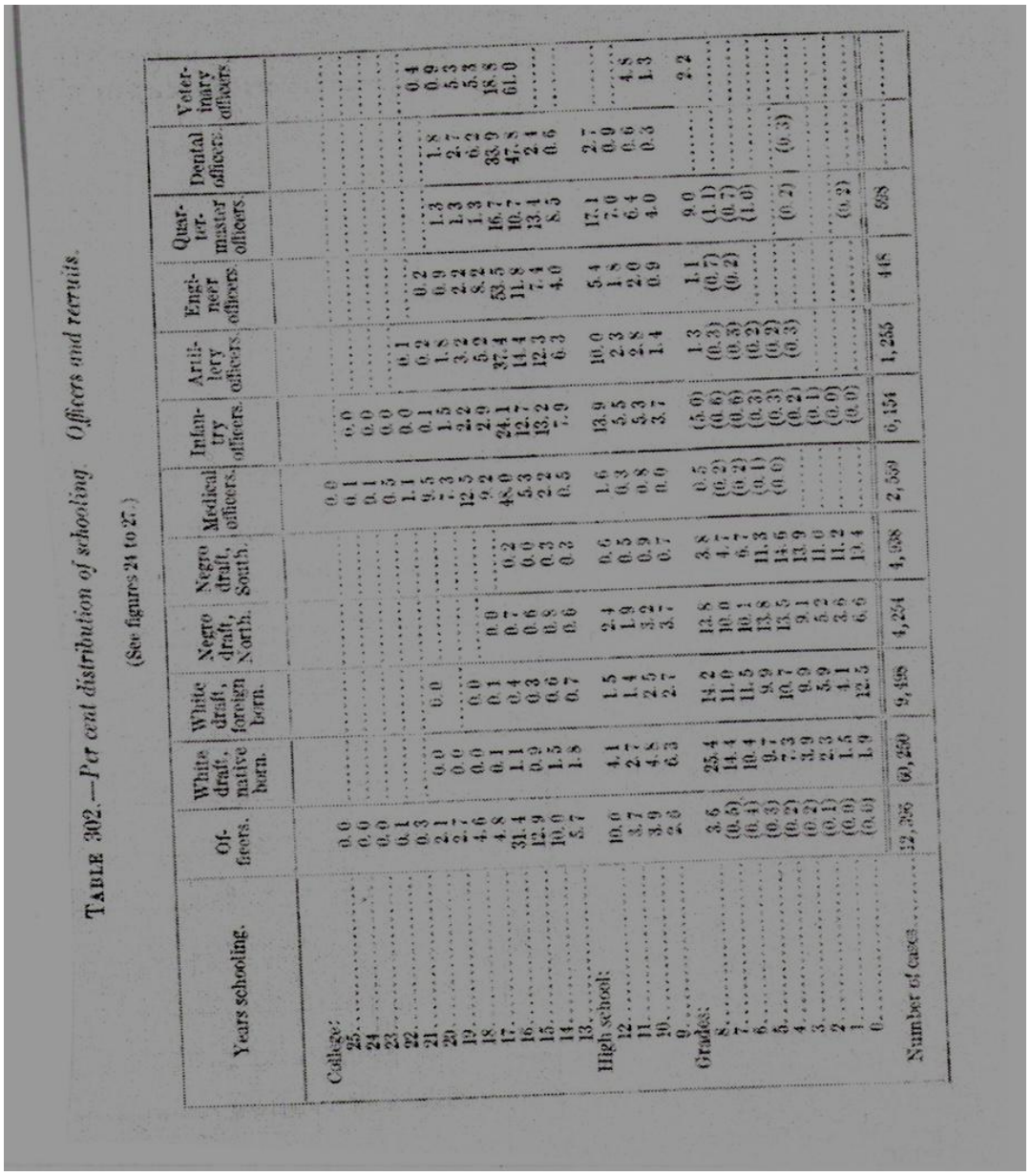


TABLE 302.—*Per cent distribution of schooling. Officers and recruits.*

(See figures 24 to 27.)

Years schooling.	Officers.	White draft, native born.	White draft, foreign born.	Negro draft, North.	Negro draft, South.	Medical officers.	Infantry officers.	Artillery officers.	Engineer officers.	Quartermaster officers.	Dental officers.	Veterinary officers.
College:												
25	0.0					0.0	0.0					
24	0.0					0.1	0.0					
23	0.0					0.3	0.0					
22	0.1					1.1	0.1	0.1				0.4
21	0.3	0.0	0.0			3.5	1.5	1.8	0.2	1.3	1.8	0.9
20	2.1	0.0	0.0			7.3	2.2	3.2	0.9	1.3	2.7	5.3
19	2.7	0.0	0.0			12.5	2.9	5.0	2.2	1.3	6.2	5.3
18	4.6	0.0	0.1	0.0		9.2	24.1	37.4	53.5	16.7	33.9	18.8
17	4.8	0.1	0.1	0.0	0.2	48.0	12.7	14.4	11.8	10.7	47.8	61.0
16	31.4	1.1	0.4	0.7	0.0	5.3	13.2	12.3	7.4	13.4	2.1	
15	12.9	0.9	0.3	0.6	0.3	2.2	7.9	6.3	4.0	8.5	0.6	
14	10.0	1.5	0.6	0.8	0.3	0.5						
13	5.7	1.8	0.7	0.6	0.2							
High school:												
12	10.0	4.1	1.5	2.4	0.6	1.6	13.9	10.0	5.4	17.1	2.7	
11	3.7	2.7	1.4	1.9	0.3	0.3	5.5	2.3	1.8	2.0	0.9	
10	3.9	4.8	2.5	3.2	0.9	0.8	5.3	2.8	2.0	6.4	0.6	4.8
9	2.0	6.3	2.7	3.7	0.7	0.6	3.7	1.4	0.9	4.0	0.3	1.3
Grades:												
8	3.6	25.4	14.2	13.8	3.8	0.5	(5.6)	1.3	1.1	9.0		2.2
7	(0.5)	14.4	11.0	10.0	4.7	(0.2)	(0.6)	(0.3)	(0.7)	(1.1)		
6	(0.1)	10.4	11.5	10.1	6.7	(0.2)	(0.6)	(0.3)	(0.2)	(0.7)		
5	(0.3)	9.7	9.9	13.8	11.3	(0.1)	(0.3)	(0.2)		(1.0)		
4	(0.2)	7.3	10.7	13.5	14.6	(0.0)	(0.3)	(0.2)				
3	(0.2)	3.9	9.9	9.1	13.9		(0.2)	(0.3)		(0.2)	(0.3)	
2	(0.1)	2.3	3.9	5.2	11.0		(0.1)					
1	(0.0)	1.5	4.1	3.6	11.2		(0.0)			(0.2)		
0	(0.0)	1.9	12.5	6.6	13.4		(0.0)					
Number of cases	12,595	60,250	9,488	4,254	4,538	2,559	6,154	1,255	448	503		

Note. Adapted from Yerkes, R. M. (1921). *Psychological examining in the United States Army*. Washington DC: Government Printing Office.

Appendix C: CSBA Sample

CSBA Sample
Board Policy

Instruction BP 6152(a)

CLASS ASSIGNMENT

Note: The following policy is **optional** and should be modified to reflect district practice.

The Governing Board believes students should be assigned to classes and/or grouped in a manner that provides the most effective learning environment for all students.

When assigning students to specific classes, the principal or designee may consider the following criteria:

1. Staff recommendation, including, but not limited to, the recommendations of teachers and counselors

2. Skills and classroom management style of individual teachers

3. Student skill level as indicated by achievement and testing data

(cf. 5121 - Grades/Evaluation of Student Achievement)
(cf. 6162.51 - Standardized Testing and Reporting Program)

4. Balance of high, medium, and low academic achievers

5. Student interests, readiness, behavior, and motivation

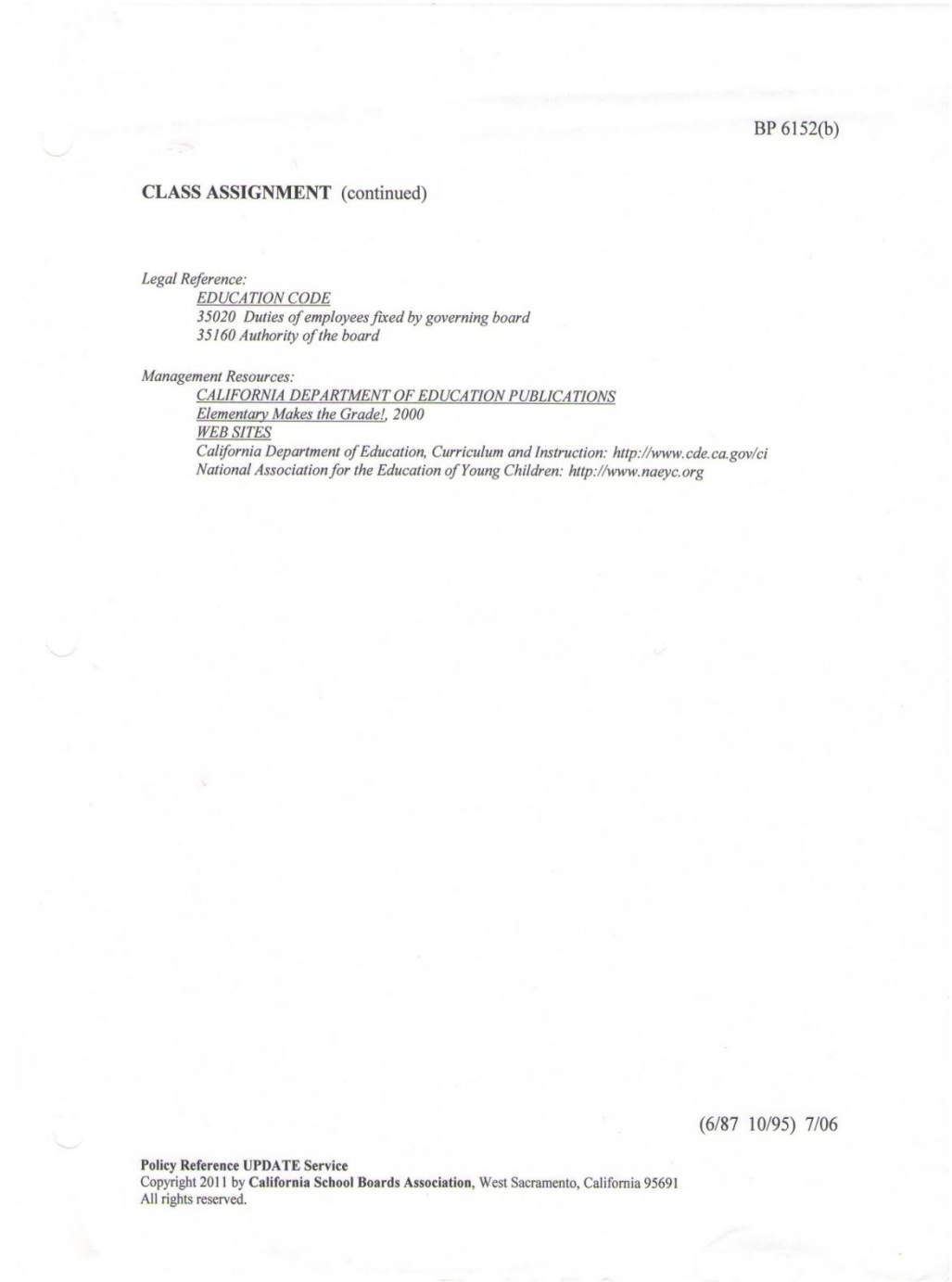
6. Student/teacher ratios and, if relevant, class size reduction considerations

(cf. 6151 - Class Size)

The principal or designee may accept from parents/guardians any information which would be helpful in making placement decisions. However, a parent/guardian who provides such information shall be informed that a request for a specific teacher shall be one of many factors which may be taken into account when determining his/her child's placement.

During the school year, the principal or designee may make any adjustments in class placement which he/she considers beneficial to the student or the educational program.

Legal Reference: (see next page)



BP 6152(b)

CLASS ASSIGNMENT (continued)

Legal Reference:
EDUCATION CODE
35020 Duties of employees fixed by governing board
35160 Authority of the board

Management Resources:
CALIFORNIA DEPARTMENT OF EDUCATION PUBLICATIONS
Elementary Makes the Grade!, 2000
WEB SITES
California Department of Education, Curriculum and Instruction: http://www.cde.ca.gov/ci
National Association for the Education of Young Children: http://www.naeyc.org

(6/87 10/95) 7/06

Note. Adapted from California Department of Education, Curriculum and Instruction: www.cde.ca.gov/ci.

Appendix D: Class Assignment Policies 1996-2010

Policy BP6152 Instruction Class Assignment California/Los Angeles County

School/ Date of Adoption	**Board of Trustees Believed Students Should be Assigned to Classes and/or Grouped in a Manner that Provides the Most Effective Learning Environment for All Students**	**Student Ability** S=Skill Level T=Test Scores ST=Standardized Test Scores G=Grades E=Evaluation of Student Achievement R=Reporting Program	**Placement Decision** S=Superintendent T=Teacher C=Counselor P=Parents PR=Principal A=Administrators R=Resource Teachers L=Language Development Teachers	**Group Balance** A=Academic E=Ethnic S=Social EM=Emotional H=High M=Medium L=Low G=Gender I=Interest R=Readiness B=Behavior M=Motivation	**Teacher Quality** S=Skill C=Classroom Management ST=Strength T=Training or Credentical	**Placement Readjustment Decision Makers** S=Superintendent T=Teacher P=Parent PR=Principal
PUSD/1996			S,T,	G,E,H,M,L,S,E,I,B,M	ST	S,P
CUSD/1996			S,T	G,E,H,M,L,S,E,I,B,M	ST	S,P
CUSD/1997			S,T	G,E,H,M,L,S,E,I,B,M	ST	S,P
HUSD/2000			PR,T, P	A,G,E, S,I, R, B, M	T	S,PR, P
DJUSD/2000	Indicated	S,E,T,G,E,ST,R	PR,T,C,	H,M,L,I, R,B,M	S,	PR,P
JSD/2001				G,E,H,M,L,I,R,B,M	ST	S,P
FCUSD/2001			S,T	G,E,H,M,L,S,E,I,R,B,M	ST	S,P
VUSD/2001				G,E,H,M,L,S,E,I,R,B,M		PR,P
SCUSD/2002			S,T	G,E,H,M,L,S,E	S	S,P
GUSD/2002			PR,T	G,E,H,M,L,S,E,I,R,B,M	ST	PR,P
MPCSD/2003			S,T	G,E,H,M,L,S,E,I,R,B,M	ST	S,P
CUSD/Approved 2004,Revised2006	Indicated	S,E,ST,R,G	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
CUSD/Approved2004,	Indicated	S,E,T,G,E,ST,R	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P

Revised 2006						
BUSD/2005			S,T	G,E,H,M,L,S,E,I,R,B,M	S,T	S,P
AGDUSD/2005			S,T	G,E,H,M,L,S,E,I,R,B,M	S,T	S,P
AVUHSD/2007	Indicated	S,E,T,G,E,ST,R	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
SVUSD/2007	Indicated	S,E,T,G,E,ST,R	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
CVUSD/2007	Indicated	S,E,T,G,E,ST,R	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
AUSD/2009	Indicated	S,E,T,ST	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
MUSD/2009	Indicated	S,E,T,ST	PR,T,C	H,M,L,I,R,B,M	S,C	PR,P
SBSD/2009	Indicated	S,E,T,G,E,ST,R	PR,T,C	G,E,H,M,L,I,R,B,M		PR, P
LAUSD/2010 Current Policy BUL-5252.0		All students fulfill course of study and Assigned by appropriate grade level only	PR	Class balance in relation to other classes	Teacher Effectiveness Cannot be Determined by a Single Measure	PR

Adapted from California Department of Education, Curriculum and Instruction: www.cde.ca.gov/ci.

Appendix E: Total Students Enrolled in Vocational Education and Advanced Courses

(1995-1998)

1995 Total Enrolled	Number Assigned to Vocational Education	Number Assigned to Algebra	Number Assigned to Advanced Math	Number Assigned to Chemistry	Number Assigned to Physics
Hispanics Enrolled 201,477	1.6% 3,407	8.3% 16,908	3% 6,892	6.7%% 13,639	1% 3,131
Blacks Enrolled 48,018	29.1% 13,978	9% 4,376	3.9% 1,879	8% 4,030	1.8% 911
Whites Enrolled 91,202	26% 23,809	13.1% 11,974	9.9% 9,079	11.3% 10,393	4% 3,719

1996 Total Enrolled	Number Assigned to Vocational Education	Number Assigned to Algebra	Number Assigned to Advanced Math	Number Assigned to Chemistry	Number Assigned to Physics
Hispanic Enrollment 160,324	1.7% 2,857	1.7% 2,848	8.8% 14,157	3.6% 5,825	2.4% 12,007
Blacks Enrolled 34,470	1.9% 688	1% 345	9.9% 3,419	3.7% 1,298	8.8% 3,047
Whites Enrolled 49,296	5% 2,488	2.5% 1,266	15% 7,411	10% 4,961	12.1% 6,002

(continues)

1997	Percent and Enrollment in VOCED	Percent and Enrollment in Algebra	Percent and Enrollment in Advanced Math	Percent and Enrollment in Chemistry	Percent and Enrollment in Physics
Hispanic Total Enrollment 221,794	27.3% 60,578	7.2% 16,013	3.2% 7,122	7.2% 16,083	1.6% 3,633
Black Total Enrollment 48,332	24.5% 11,873	8.1% 3,949	3.6% 1,770	9.1% 4,428	1.7% 833
White Total Enrollment 93,929	28.9% 27,317	13% 12,237	10.1% 9,507	11.2% 10,554	3.9% 3,732

1998	Percent and Enrollment in VOCED	Percent and Enrollment in Intermediate Algebra	Percent and Enrollment in Advanced Math	Percent and Enrollment in Chemistry	Percent and Enrollment in Physics
Hispanic Total Enrollment 217,239	10.6% 23,159	4.2% 9,225	3.2% 6,999	3.3% 7,305	1.1% 2,576
Black Total Enrollment 1,248,569	5.5% 68,757	2.2% 27,400	1.7% 21,815	2.1% 26,876	.06% 8,416
White Total Enrollment 151,956	16.1% 24,564	4.4% 6,766	5.5% 8,364	4.1% 6,378	1.8% 2,845

Curriculum Vitae

Deberae Culpepper

EDUCATION AND CERTIFICATIONS

PhD, Education
Walden University
Minneapolis, MN
Spring 2012

MS, Education Leadership/School Administration
Chapman University
Palmdale, CA
Spring 2009

BA, Communication/Art History/Multiple Subject Teaching Credential
California State University Bakersfield Antelope Valley
Spring 2000

AA, General Education
Antelope Valley Community College
Lancaster, CA

CREDENTIALS

Professional Tier 1 Administration Services Credential, 2010
Professional Clear and CLAD Multiple Subjects Credential, 2005

LEADERSHIP ROLE EXPERIENCE

Founded Life Source International Charter School in 2009

- Created and developed Life Source's innovative curriculum and instruction program
- Created and developed blended learning model