Title
A silent and significant subgroup: closing the achievement gap for students in foster care

Permalink
https://escholarship.org/uc/item/0v2215cw

Author
Lustig, Michelle Lisa

Publication Date
2008

Peer reviewed|Thesis/dissertation
A Silent and Significant Subgroup: Closing the Achievement Gap for Students in Foster Care

A Dissertation submitted in partial satisfaction of the Requirements for the degree of Doctor of Education in Educational Leadership by Michelle Lisa Lustig

Committee in charge:
California State University, San Marcos

Professor John J. Halcón, Chair
Professor Jennifer Jeffries
Professor Grace McField

University of California, San Diego

Professor Alan J. Daly

2008
The Dissertation of Michelle Lisa Lustig is approved, and it is acceptable in quality and form for publication on microfilm.

Chair

University of California, San Diego
California State University, San Marcos
San Diego State University
2008
DEDICATION

This study is dedicated to all of the students in foster care who dream of a bright future. It is your resilience, hope and strength that drove this study and all of my work in this arena.
# TABLE OF CONTENTS

Signature Page............................................................................................................iii
Dedication....................................................................................................................iv
Table of Contents......................................................................................................v
List of Tables..............................................................................................................vi
Vita...............................................................................................................................x
Abstract.....................................................................................................................xvi
Chapter I...................................................................................................................1
Chapter II..................................................................................................................15
Chapter III...............................................................................................................38
Chapter IV...............................................................................................................58
Chapter V..................................................................................................................79
Appendix...................................................................................................................95
References................................................................................................................101
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>7</td>
</tr>
<tr>
<td>Table 2</td>
<td>44</td>
</tr>
<tr>
<td>Table 3</td>
<td>55</td>
</tr>
<tr>
<td>Table 4</td>
<td>62</td>
</tr>
<tr>
<td>Table 5</td>
<td>62</td>
</tr>
<tr>
<td>Table 6</td>
<td>63</td>
</tr>
<tr>
<td>Table 7</td>
<td>64</td>
</tr>
<tr>
<td>Table 8</td>
<td>65</td>
</tr>
<tr>
<td>Table 9</td>
<td>66</td>
</tr>
<tr>
<td>Table 10</td>
<td>68</td>
</tr>
<tr>
<td>Table 11</td>
<td>70</td>
</tr>
<tr>
<td>Table 12</td>
<td>71</td>
</tr>
<tr>
<td>Table 13</td>
<td>73</td>
</tr>
<tr>
<td>Table 14</td>
<td>74</td>
</tr>
<tr>
<td>Table 15</td>
<td>75</td>
</tr>
<tr>
<td>Table 16</td>
<td>76</td>
</tr>
<tr>
<td>Table 17</td>
<td>77</td>
</tr>
<tr>
<td>Table I</td>
<td>95</td>
</tr>
<tr>
<td>Table II</td>
<td>96</td>
</tr>
<tr>
<td>Table III</td>
<td>97</td>
</tr>
<tr>
<td>Table IV</td>
<td>98</td>
</tr>
<tr>
<td>Table V</td>
<td>100</td>
</tr>
</tbody>
</table>
LIST OF TABLES (CONTINUED)

Table VI...........................................................................................................100
ACKNOWLEDGEMENTS

I would like to thank all of the individuals who contributed to the completion of this research study:

To my committee Char, Dr. John Halcón: It has been a long road, but without your prodding and encouragement, I would never have entered the Ed.D. program and would not be at this point today. I appreciate your commitment to our shared vision.

To committee members Dr. Alan J. Daly, Dr. Grace McField and Dr. Jennifer Jeffries: Thank you for your patience, guidance and support. You have contributed to my learning and my growth.

To my children Michael, Justen and Sydney: Thank you for understanding when I was unavailable or distracted. You have motivated me to succeed by being the amazing individuals that you all are.

To my husband Brian: Words cannot express how you much your unending support and confidence in my ability has meant to me. You have always been my biggest supporter and my true ally in all of my pursuits. You are my best friend, and my soul mate. I love you more than you know. Now, I promise not to go back to school again.

To The Square: Dr. Kevin Holt, Dr. Luis Ibarra and Dr. Cynthia Avery: How do you thank someone for taking you from MSW to Ed.D? You kept me on track and kept me sane. You are dear friends and I am so grateful to have met you.

Finally, to the students in foster care who come to their tutoring sessions everyday willing to face their challenges and overcome their obstacles, who teach our
tutors more than they are taught, who persevere through multiple schools and placements, I say Thank You. You are now and have always been my inspiration.
VITA

Education
University of California, San Diego  San Diego, California
Doctor of Education  June 2008
San Diego State University  San Diego, California
Master of Social Work, Children, Youth and Families,  May 1997
Child Welfare Title IV E
San Diego State University  San Diego, California
Bachelor of Arts in Psychology, Minor in English  May 1988

Professional Research
Doctoral Dissertation
“A Silent and Significant Sub group: Closing the  April 2008
Achievement gap for Students in Foster care”
Master's Thesis
“Impact of Child and Adolescent Psychosocial Functioning on Group Home and Residential Placement”

Professional Affiliations/Certifications
Vice Chair-California Foster Youth Education Task Force  August 2007-Present
Member of National Association of Social Workers  November 1999-Present
Associate Clinical Social Worker- Intern #12390  November 15, 2000

Professional Teaching Experience
California State University, San Marcos  San Marcos, California
-College of Education  Fall 2002, Spring 2004,
Adjunct Professor  Summer 2004 Spring 2007, Spring/Fall 2007

UC Davis ILP Institute-Foster Youth Services  August 2007
UCSD, College of Education

Guest Lecturer on topics ranging from Child Welfare,  Fall 2002 -Present
Child Abuse and Neglect, Child hood Trauma, and
Educational outcomes for traumatized youth.

Palomar College, Child Development
Guest Lecturer on topics ranging from Child Welfare,  Fall 2001 -Present
Child Abuse and Neglect, Child hood Trauma, and
Educational outcomes for traumatized youth
**Professional Conference Presentations**

- International Conference on Education
  - "Teaching Future Teachers about Foster Care"
  - Oahu, Hawaii
  - January 4, 2004

- Hanson Symposium
  - "Teaching Future Teachers about Foster Children"
  - Escondido, California
  - February 26, 2004

- It’s My Life Conference
  - "Tutor Connection: Collaboration between Casey Family Programs, CSUSM and SD County HHSA"
  - October 14, 2004

- CSU Education Symposium
  - "Public Education and Public Child Welfare: Creating Collaborations"
  - April 2, 2005

- Annual Dropout Prevention Conference
  - "Academic Interventions for Foster Youth"
  - October 2005

- Ready to Learn/National Dropout Prevention Conference
  - "Closing the Achievement Gap for Students in Foster Care"
  - October 2006

- Alternative Education Conference
  - "Endless Dreams: Closing the Achievement Gap for Students in Foster Care"
  - October 2006

- Foster Youth Services and Support Services
  - "Closing the Achievement Gap for Students in Foster Care"
  - January 2007

- National Working Group on the Education of Children in Foster Care
  - "Tutor Connection: Bridging two worlds, closing the gap"
  - May 2007

- National Roundtable on Education and Foster Care
  - "The Education of Students in Foster Care"
  - August 2007

- Data Quality Campaign-Quarterly Issue Meeting Panelist
  - "Ready to Learn"
  - September 2007

- Blueprint for Success
  - "Foster Youth Services Programs: Addressing the Educational Needs of Students in Foster Care"
  - October 2007

- USD University Consortium
  - "Service Learning and Foster Care"
  - November 2007

- CCESSA/CSBE/PTA Conference-Community Collaboratives
  - "Closing the Achievement gap for Students in Foster care"
  - January 2008

- AERA Annual Meeting
  - "Civic Engagement: A Southern California Collaborative Initiative With Foster Youth Services and Higher Education"
  - March 2008
Professional Work Experience
San Diego County Office of Education
Coordinator, Foster Youth Services

- Responsible for all operations of a mandated, grant funded program increasing the academic outcomes for students in foster care. This includes, grant writing, budget management, staff management, community collaboration, state reporting, and participation in multi system efforts to address the achievement gap for students in foster care.
- Develop programming, services and delivery methods to meet the mandates of the California Department of Education. These include, tutoring, mentoring, academic counseling, transition and emancipation services.
- Responsible for coordination of multiple grants totaling in excess of 1.2 million dollars.
- Create and deliverer trainings to schools, school districts, child welfare, probation, juvenile court and other stakeholders on the legislative mandates regarding the education of students in foster care, as well as successful interventions for this population.
- Insure compliance with all education code that related to foster youth and work cork with all school districts to ensure compliance.
- Develop and oversee the administration of a web based data management system which housing the health and education records of all San Diego County students in foster care, in both he child welfare and delinquency systems. Insure this data exchange is secure, protected and accessible to all parties responsible for the education of student sin foster care.

Casey Family Programs
San Diego, California
Community Services Social Worker

- Develop, implement and coordinate a tutoring program for current and former foster youth.
  Collaborate with California State University-San Marcos to create partnerships for The Tutor Connection Program. Develop and deliver classroom curriculum in conjunction with university professors to include child welfare curriculum. Recruit youth to participate in tutoring with CSUSM students. Coordinate and oversee all tutor/student matches and trouble shoot all crisis. Facilitate the growth of the program to reach as many future teachers and foster youth as possible.
- Develop, implement and coordinate a transitional housing program for emancipating foster youth.
  Collaborate with Sand Diego County Health and Human Services Agency and Sand Diego County Public Housing Authority to create partnerships for the Emancipated Foster Youth Transitional Housing Program.
- Provide clinical support and training to community partners. Develop training to meet the needs of a variety of different programs.
Direct Service Social Worker
November 1999-August 2001

- Responsible for all phases of case management for a long term foster care caseload including but not limited to: developing and implementing long term outcome oriented case plans, conducting ongoing strength based assessments of youth and families, participating in treatment teams, IEP meetings, annual reviews, coordination of birth family visitation, and self sufficiency preparation.
- Provision of a variety of interventions to families and youth throughout their placement. Referrals to outside resources including group individual and family therapy.
- Maintain a working partnership with families, HHSA social workers and community partners to best serve the needs of long-term foster youth and families, as well as the larger child welfare population.

Scripps Home Health Care
San Diego, California
Medical Social Worker
November 1998- November 1999

- Responsible for conducting intake and ongoing psychosocial assessments of homebound patients ranging in age from children to the geriatric population. Assess for safety in home, and identify areas of need.
- Identify patient’s needs to remain safely at home. Make all necessary community resource referrals Assist with placement in more restrictive settings when necessary. Referral to Hospice services when appropriate.
- Coordinate care with medical staff including doctors, nurses, physical, occupational and speech therapists and home health aides.
- Identify any barriers to home safety and coordinate services necessary to remove barriers.

Health and Human Services Agency
San Diego, California- Residential Services Unit
Protective Services Worker II
May 1997-June 1999

- Responsible for all case management functions for dependant minors of San Diego County Juvenile court including but not limited to; placement, visitation, coordination of educational and mental health needs, attendance and participation at IEP and treatment team meetings, court functions, reunification services, transitional and emancipation services.
- Maintain communication with minors and parents attorneys, advocates, foster families and group home social workers and mental health providers.
- Development of case plans to best serve the changing needs of dependant minors, level of care assessments, risk assessments, resource and referral to community agencies as needed.
Department of Social Services
San Diego, California – Adult and Employment Services
In Home Supportive Services
Social Worker III

- Responsible for all phases of case management for caseload of disabled children, adults and the aged.
- Conduct assessments to evaluate need and facilitate service delivery.
- Advocate for clients and see out community resources and referrals.
- Interface with discharge planners, home health agencies and physicians to evaluate clients’ needs.
- Maintain service case to insure client can remain at home safely.

SDSU Foundation
San Diego, California-Child and Family Research Group
Recruitment Coordinator/Fieldwork Coordinator

- Responsible for recruiting research subjects for longitudinal studies on the mental health needs of children in foster care. Subjects included children and youth in foster care, foster parents, kinship caregivers, and biological parents.
- Coordinate and oversee implementation of LongScan, a twenty year longitudinal study on outcomes of youth in foster care. Report to and coordinate with four other national sites to insure consistency and accuracy of data collection procedures.
- Supervise staff of 20 research assistants and conduct training on standardized instrument administration.
- Conduct and score standardized measures. Track data via a computerized tracking system.
- Track subjects for longitudinal studies. Create tracking system.

Graduate Internships
Health and Human Services Agency
San Diego, California- Residential Services Unit
MSW Intern

- Receive training in all aspects of case management of a child welfare caseload, including court reports, filing petitions, identifying placements, attending treatment team meetings and case planning.
- Responsible for all case management functions under the supervision of a Protective Services Worker II.
- Maintain contact, visitation and communication with minors and all involved parties including placement social workers, attorneys, parents, relatives and advocates.
Children’s Hospital and Health Center  September 1995-May 1996
San Diego, California-Outpatient Psychiatry  
MSW Intern

- Undergo training within a multidisciplinary setting, and function as a member of a therapeutic team.
- Maintain a caseload of children and conduct weekly therapy sessions, both individual and collateral.
- Conduct diagnostic interviews, complete service plans, and regularly present findings to a multi disciplinary team.

Volunteer Experience

San Diego County Department of Social Services-  March 1987-August 1988
Special Friend
ABSTRACT OF THE DISSERTATION

A Silent and Significant Subgroup:
Closing the Achievement Gap for Students in Foster Care

by

Michelle Lisa Lustig

Doctor of Education

University of California, San Diego, 2008
California State University, San Marcos, 2008
San Diego State University, 2008

Professor J. Halcón, Chair

Children and youth in foster care comprise a significant subgroup of low performing students in public schools today. The current climate of accountability has created the need for education and child welfare professionals to address the unique needs of students in foster care to increase academic achievement. Additionally, recent legislation in California, such as AB490 and AB1808 modified the Education Code and Welfare and Institutions Code. These mandates include a requirement that the unique educational circumstances of foster children are addressed by child welfare, public education and the judiciary. This study explores strategies and interventions that may increase the academic achievement of students in foster care. The study
compares academic outcomes for foster youth receiving tutoring services from three
different programs. These findings speak to the impact of supplemental academic
support services and the practical application of these services for this vulnerable
population. The findings serve to inform public education, child welfare and Foster
Youth Services programs throughout the State of California and across the United
States.
CHAPTER I: INTRODUCTION

I was in nine different group homes as a teenager. The one stable thing in my life was my high school...When I got moved to the children’s shelter, school staff took turns picking me up to make sure that I got to school. At the time, I was glad to get out of the shelter, but in retrospect I realize that was the most powerful thing somebody could have ever done for me-made sure I got an education.

Tony, 22 in “A Rage to do Better”

The experience of being a child in foster care is unique. In the United States today, there are more than 500,000 children living in foster care. Nearly one fifth of these children, 73,245, live in the state of California (University of California, Berkeley, 2007). The vast majority is of school age, with 73% of all foster children being between the ages of 5 and 20 (AFCARS, 2006). In general, many foster children have experienced abuse and/or neglect at the hands of their biological parents (Welfare and Institutions Code, 1979). Many have been removed from their families of origin to protect them from further harm. Children in foster care must overcome the trauma of their past, the chaos of their present and the uncertainty of their future.

Foster youth live in our neighborhoods, belong to youth sporting leagues and attend the public schools. They rely on adults around them much as any other child, but are often lacking a child’s greatest ally: a mother, father, or both. In place of competent parents, foster youth must rely on substitutes: caregivers, social workers, advocates, attorneys, judges and teachers to insure that they are safe, cared for
educated and prepared for adulthood. Substitute caregivers include foster parents, relative caregivers (kin), non-related relatives, or group home providers.

*The Child Welfare System*

The Child Welfare System, “which has been delegated by law responsibility for some aspect of parental care” (Child Welfare League of America, 1957) administers, supervises and is responsible for the health, welfare and safety of children and youth in foster care. Foster care, also referred to as out-of-home-care, exists as a governmental institution for primarily one reason: to protect children. In 2005, there were 482,011 reports of child abuse in California. Of these, 109,463 were substantiated. The child victims may have experienced neglect, physical, sexual and/or emotional abuse. The Center for Social Services Research (CSSR) at The University of California, Berkeley, reported that in 2007, California’s children entered foster care at the following rates for these specific types of child maltreatment:

- Sexual abuse 8.0%
- Physical abuse 17.2%
- Severe neglect 1.5%
- General neglect 37.7%
- Exploitation .01%
- Emotional abuse 8.4%
- Caretaker Absence/Incapacitated 3.0%
- At risk/sibling abused 11.8%
- Significant risk 12.4%
Children in this bi-annual point-in-time survey are counted only once despite incidences of multiple types of abuse, with only the most severe findings cited above (Needell, Webster, Armijo, Lee, Cuccaro-Alamin, Shaw, Dawson, Piccus, Magruder, Exel, Conley, Smith, Dunn, Frerer, & Putnam-Hornstein, 2006).

**Impact of Foster Care**

Children and youth who grow up in foster care experience many complications in life that are unknown to their classmates. Unfortunately, the system, which is in place to protect them, often causes additional harm (Badeau & Gesiriech, 2003). Foster care is intended to be temporary. Ideally, foster children will be reunified with their family of origin quickly, yet many children languish in the Child Welfare system until their 18th birthday (The Pew Commission on Children in Foster Care, 2004). Foster children experience multiple placement changes, often for reasons beyond their control. Placement changes may occur for a variety of reasons ranging from a change in visitation orders, a child becoming too old for a current placement, the opportunity to be placed with a sibling, or a foster parent ceasing to be a foster care provider. Each change of placement, whether it is from relative care, foster care, or group home care carries with it serious repercussions. Each placement change results in the loss of 4-6 months of academic skill (U.S. Department of Education, 2001, p. 36). Every move means a change of home, community and school. Foster youth face a constant struggle to understand new expectations, norms and rules. They lose contact with friends, siblings, teammates, and teachers. The impact of frequent school changes is so dramatic that the U.S. Department of Education recommends that all Local Education
Agencies (LEA’s) adopt a “One child, One school, One Year” policy (U.S. Department of Education, 2000, p. 22).

The life of a foster child is rife with uncertainty (Whiting & Lee, 2003). A foster child often is powerless to influence the decisions made about their lives. They must manage relationships most youth never have to experience. They regularly interact with attorneys, judges and social workers. They are separated from extended family, siblings and parents. They must navigate this unique world of court dates, visitation and reunification orders. They routinely attend supervised sibling visitation sessions and submit to psychiatric evaluations while their classmates focus on phonemic awareness, multiplication tables, and learning social skills.

Second, there is no formal training provided to teachers about children in foster care, or the foster care system. Teacher Credentialing programs do not teach about their trauma or its educational impacts. In fact, educators receive very little information, if any, on this population. Children in foster care cannot expect empathy among teachers who have little understanding of their trauma.

Third, there is the impact of foster care on learning. Many children enter the child welfare system during elementary school when the foundation is built for all future learning. Thus, many of these children miss the opportunity to develop the core skills needed to have a sound academic base (Edward S. Muskie School of Public Service, 1999). The impact of foster care on educational achievement is dramatic. Difficulties with enrollment, placement in more restrictive educational settings than needed, and a lack of educational advocates add to the barriers facing students in foster care (Casey Family Programs, 2004). Multiple placement changes result in
frequent school changes. School changes provide opportunities for records to be delayed or lost during these transitions. A foster child’s Individualized Education Program (IEP) may be disrupted or may not be recognized by the new school. This may delay or prevent the delivery of Special Education services.

The educational struggles of foster youth are not the sole responsibility of public education, yet the professional social workers that work most closely with foster youth traditionally spend little time concerned with their education (Casey Family Programs, 2004). It is not unusual for parents to assume that it is the school’s responsibility to educate their children. The same dynamic occurs among social workers. Moreover, public education and public child welfare have perceived and actual restrictions around information sharing which further inhibit collaboration between these two worlds (McNaught, 2005).

Foster Youth and Public Education

No Child Left Behind (NCLB) brought an era of accountability to public education (U.S. Department of Education, 2002). The education system is required to attend to the academic needs of all children, especially those with the greatest need. NCLB relies heavily on results from standardized testing to access individual school’s performance and progress in bringing all students to proficient levels of academic functioning. NCLB mandates that local education agencies (LEA’s) provide supplemental academic support (SES) services to specific groups of underperforming students. These SES services may include tutoring. The goal of this legislation is to have all students proficient in reading and math by 2014 (U.S. Department of Education, 2002).
According to the U.S. Department of Education (2002), children in foster care are overrepresented in a majority of the underachieving sub groups as defined by NCLB. These include:

- 5 ethnic groups
  - American Indian
  - Asian
  - Hispanic
  - Black
  - White
- Limited English Proficient
- Special Education
- Migrant Status
- Free and Reduced Priced Lunch.

Foster children are disproportionately children of color (Table 1-below). For example, according to the U.S. Census, in 2004 in San Diego County, 7% of children are African American, yet 23% of all foster children are African American. Conversely, 37% of children in San Diego County are White, but only 28.35% of all foster children are white (AFCARS, 2005).
Additionally, students in foster care are eligible for Special Education Services at three times the rate of the general population: 40% versus 13% (George, Voorhis, Grant, Casey & Robinson, 1992). Children in foster care tend to have grown up in poverty and remain at or below the poverty level once they enter the foster care system (Barbell & Freundlich, 2001).

In an era of high stake testing and increased emphasis on accountability, it has become necessary to look at all underachieving subgroups in our public schools, including students in foster care. To accomplish this, educators must understand the myriad of factors that impact foster children’s academic performance.

What type of academic support services will help to close the achievement gap for students who have experienced trauma, abuse and neglect? What supports can be put in place to help these students overcome such adversity? Research shows that there are two predictors of positive outcomes for children who grow up in the foster care system; these are academic achievement, and a connection to a significant adult

### Table 1: Percentages of San Diego County children by ethnicity in the general and foster care populations.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>General Population</th>
<th>Foster Care Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>7.51</td>
<td>23.02</td>
</tr>
<tr>
<td>White</td>
<td>37.36</td>
<td>28.35</td>
</tr>
<tr>
<td>Hispanic</td>
<td>41.79</td>
<td>43.36</td>
</tr>
<tr>
<td>Asian</td>
<td>5.09</td>
<td>3.15</td>
</tr>
</tbody>
</table>

In the general population, African Americans represent 7.51% of the population, while in the foster care population, they represent 23.02%. Similarly, Whites represent 37.36% in the general population and 28.35% in the foster care population.
Research further suggests that a significant adult is most effective if they are not related to the formal child welfare system. In fact, foster care alumni often name a teacher as the adult who influenced them the most (Pecora et al. 2003).

Research in academic achievement finds that there is alignment between increased rigor in academic assignments in the classroom and increased scores on standardized testing (Newmann, Bryk & Nagoaka, 2001). One study found that many of the barriers to student achievement come from outside of the classroom and suggests strategies for addressing these barriers (Taylor, 2004). These suggestions include an increased understanding of the culture of a community, parent and student involvement, and student and teacher behavior changes. The author found that these barriers negatively impact standardized test scores. In another study, the significant role of the classroom teacher in assessing students is reviewed, and the need for teachers to become adept at providing students with the necessary skills to utilize assessments on a daily basis is discussed (Batron, 1999).

Research on standardized testing is critical as a measure of students’ ability. In one study, the authors looked at standardized tests administered in public schools throughout the United States. They found that the majority of tests were biased or inaccurate, particularly for low income and minority students (Medina & Neill, 1990). Other researchers have reached similar conclusions, pointing to standardized tests as an imprecise measure of student ability, and fault such testing for creating a hostile and unproductive classroom environment for students, teachers, and schools (Klein,
Academic Interventions for Foster Youth

This study utilizes participants’ pre and post standardized test scores on the Wide Range Achievement Test 4 (WRAT 4). Participants were enrolled in one of three tutoring programs. They were tested prior to and at the conclusion of 12 weeks of tutoring. The three cohorts of foster youth were compared to see if one or more of these interventions had an impact on their academic achievement. The three cohorts were matched demographically. The intent was to have three cohorts of 50 participants each. Unfortunately the actual numbers were smaller in each of the three cohorts. A variety of factors influence sample size and will be discussed in detail later. The cohorts consisted of 35, 44 and 9 participants, respectively, in the three cohorts.

The first cohort received services from a paraprofessional home-based tutoring program that utilizes college students as Community Service Learning participants to provide one-on-one tutoring to foster youth. The second cohort is drawn from two private agencies that are certified by the California Department of Education to provide academic support services to students under the NCLB Title I supplemental program. These agencies provide one on one tutoring services in the foster youth’s home. The third cohort received tutoring services from a holistic tutoring program that serves an economically disadvantaged community in an urban southern California city. The tutoring center is community-based and is supported by local community leaders.
This study assessed the impact of the three tutoring models on student achievement as measured by the WRAT 4. The WRAT 4 is a norm-referenced test approved by the State of California to meet the requirements of NCLB as a pre and post test measure by Supplemental Education Service (SES) providers (California Department of Education, 2003). Norm-referenced tests are designed to describe the performance of individual students, schools, districts or states in “terms of a distribution of performance” (Parker-Boudett, City, & Murnane, 2005, p. 37).

The first group of students receiving supplemental academic support services was a cohort of 35 students in foster care that received tutoring services through a paraprofessional model called The Tutor Connection Program. Paraprofessional models utilize untrained non-professionals to tutor students. These paraprofessionals are not credentialed teachers. They may or may not be trained in a particular tutoring/academic intervention method.

Pre-service students, who provide tutoring services in The Tutor Connection Program, are teacher education students enrolled in a prerequisite class in the College of Education of a large public university. Specific sections (whose number varies every semester) of this course (Education 364: Diversity in schooling) provide college students with an opportunity to tutor students in foster care while participating in a community service-learning project as a means of completing a portion of a state-mandated forty-five student contact hours.

“Service-learning combines service objectives with learning objectives with the intent that the activity changed both the recipient and the provider of the service. This is accomplished by combining service tasks with structured opportunities that link the
task to self-reflection, self-discovery, and the acquisition and comprehension of values, skills, and knowledge content.” (National Service-Learning Clearinghouse, 2004).

Pre-service teachers receive tailored curriculum and specific material on the foster care system and the education of foster children. In turn, they serve as community service learning students. While enrolled in this class, they are required to provide 20 hours of one-on-one tutoring to foster youth over the semester in which they are enrolled in the class. Tutoring can occur in the foster child’s home, group home, and/or community agency.

A second cohort of 44 foster youth received tutoring services from two private tutoring agencies certified by the California Department of Education to provide free services to youth who qualify for the Title I. These agencies are certified every two years and must meet all of the requirements under NCLB to provide free services to underachieving students. The agencies must use State standard aligned materials, and meet specific requirements set forth by NCLB.

The third cohort of 9 students received services at a tutoring center, Success Inc. which looks at the whole child, in the context of their family, community and society. They then assess the best intervention for academic remediation and acceleration. The center is Title I certified by the California Department of Education, and meets the requirements needed to provide Supplemental Educational Support services (SES) under No Child Left Behind (NCLB). The tutoring center is also required to align it’s curriculum with state standards for grades K-12, show a record of increased achievement, have a plan for ongoing communication with the student’s
school, and show an increase on state standardized test scores for the student’s served. Tutors in this program are often credentialed teachers, many of whom hold advanced degrees.

Funding for students in foster care who are receiving services from Success Inc. comes from several sources, including San Diego County Foster Youth Services (grant funded through the State of California), local school district Title I funds, and public and private funds from child welfare or substitute care providers.

A review of the literature that follows in Chapter 3 will address the current state of research relating to the impact of child abuse and neglect, the education outcomes of foster youth, and related factors that impact their educational achievement.

**Purpose**

A child growing up in foster care faces many challenges to becoming a self-sufficient contributing member of society. One of the best predictors of success after leaving the foster care system is academic attainment. While there is much evidence to show that students in foster care lag behind their age mates academically, and that abuse and neglect negatively impact learning, there is little evidence of the impact of tutoring programs on academic achievement for these students.

This study identifies some key tutoring program characteristics that may benefit foster children’s academic achievement. The intended outcome of this research is that Foster Youth Services Programs, public child welfare, and public education have information to guide the types of services foster youth receive and how they are
delivered. Further, this study seeks to identify cost effective, reliable methods to assist students in foster care to reach their full potential.

Rationale

In July of 2006, the California Legislature passed Assembly Bill 1808, The Budget Act of 2006. This act modified existing Education Codes mandating that Foster Youth Services Programs (FYS), at the County level, provide, or arrange for the referral to, tutoring services for foster youth within their jurisdiction (Education Code 42921). While FYS and child welfare advocates agree this is a positive addition to FYS program mandates, the legislation does not specify what type of tutoring program should be offered, or which children will receive priority for services.

There are FYS programs in fifty-seven counties in California, and 6 core school district programs. All FYS programs are funded by the State of California. The Core District programs include San Juan Unified, Mt. Diablo Unified, Sacramento City Unified, Elk Grove Unified, Paramount Unified, and Placer/Nevada School Districts. Core Programs are required to work directly with foster care within that district to lower suspension and expulsion rates, decrease truancy and disciplinary problems, and increase academic outcomes.

In contrast, countywide programs have historically been responsible for systems level work. FYS programs were required to bring together key constituents, sponsor opportunities for significant dialogue and collaboration, and increase knowledge and understanding through training to the larger child welfare and education communities. The passage of the Budget Act of 2006, and the Trailer Bill language that modified Education Code 42921, shifted the emphasis of the work of
countywide FYS programs. As of July 1, 2006, all countywide FYS programs are required to provide tutoring services or referrals to such services, and mentoring, counseling, transition, and emancipation services for foster youth. Each program is mandated to develop a methodology for determining which services will be provided and to whom, and a hierarchy of needs for these services. The expectation is that each countywide FYS program will have a package of services that best meets their community’s needs.

The Core and Countywide FYS programs attempt to serve nearly every school aged child in foster care with the exception of those placed with relatives. FYS programs cannot provide direct services to every eligible foster child due to budgetary constraints, thus it is paramount that there are guidelines to determine priorities for scant resources.

Research Questions

The following research questions are addressed in this study:

Question #1: Does participation in any one of the three tutoring programs being studied increase academic achievement for students in foster care?

Question #2: Which of the three tested tutorial models are most effective in increasing academic outcomes for foster children?

Null Hypothesis

Students in foster care will not increase their academic achievement as a result of participation in any of the three tested tutoring models as measured by pre and post WRAT 4 standardized testing.
CHAPTER II: REVIEW OF THE LITERATURE

Child Welfare and Foster Care

The study of the impact of child abuse on academic achievement is in its infancy (Fanshell, & Shinn, 1978). The first documented case of child abuse and neglect was prosecuted in 1874, under existing Animal Cruelty laws in New York City. Prior to 1944, when the U.S. Supreme Court ruled that the States had the authority to intervene in families to protect children, no laws existed to protect a child from physical or sexual abuse. In 1962, Kempe, a physician, published, The Battered Child Syndrome. The National Association of Counsel for Children (2005) noted:

Through the article, Kempe and his colleagues exposed the reality that significant numbers of parents and caretakers batter their children, even to death. “The Battered Child Syndrome” described a pattern of child abuse resulting in certain clinical conditions and established a medical and psychiatric model of the cause of child abuse. The article marked the development of child abuse as a distinct academic subject. The work led to professional and public awareness of the existence and magnitude of child abuse in the United States and throughout the world (p. 5).

Scholars conducting research on child welfare and foster care have focused primarily on their physical, developmental, mental and emotional health (Clausen, Landsverk, Ganger, Chadwick & Litrownik, 1998, Fanshell & Shinn, 1975, Landsverk, Garland & Leslie, 2002, Leslie, Landsverk, Ezzet-Lofstrom, Tchann, Price & Brew 1998, Price & Landsverk 1998, & Slyman & Garland, 2000). They reported on the impact and effects of abuse and neglect on the physical and social-emotional well being of the child, the correlation between abuse and neglect and stunted development, and the increased incidence of mental disorders among foster children. Davis & Ellis-
MacLeod (1994), and Taussig (2001) looked at the process the offending (abusive or neglectful) parent must go through in order to have their child return to their care, custody and control. Referred to as ‘reunification’, this process compels an errant parent to complete parenting classes, drug treatment, anger management classes, drug testing, family and/or individual therapy. Their findings include the significance of sustained birth family relationships, the recidivism rates of reunified parents, and the positive impact of successful reunification. Barrio & Hughes (2000), and Leslie, Landsverk, Horton, Ganger & Newton (2000), examined the influence of kinship care versus stranger (foster) care. This research suggests that children fare better when placed with kin, and that youth tend to remain more connected to their communities, schools and religious organizations. Longitudinal studies have examined the long term effects of the foster care experience on children and youth who grow up in the foster care system (Fanshell & Shinn, 1978, Taussig, Clyman & Landsverk, 2001, Courtney, Terao & Bost, 2004).

Runyan, Curtis, Hunter, Black, Kotch, Bandgdiwala, Dubowitz, English, Everson, & Landsverk (1998), began a longitudinal study in 1990 called LONGSCAN, (Consortium for Longitudinal Studies of Child Abuse and Neglect). This 20-year research project is taking place at 5 sites (3 urban, one suburban and one statewide) in the United States. Although each site is unique and its research goals individualized, all are using the same research protocol. The findings of each site can stand alone, but also are combined to provide a comprehensive set of recommendations regarding the impact of child abuse and neglect. The studies are following cohorts of youth who entered foster care prior to their third birthday. The
outcomes of these cohorts will inform researchers for years to come. Although several years remain in the study, the early participants have grown up in foster care, graduated (or not graduated) from high school, have become parents, struggled to find employment, and/or have been homeless. Two research briefs have been issued thus far and multiple articles published (LONGSCAN Investigators, 1998, 2006). Current findings and recommendations focus on the areas of risk/protective factors related to abuse and neglect, the social, behavioral and emotional consequences of child maltreatment, the integral role fathers and father figures play on outcomes for children, the need for closer association between assessment and placement decisions, and the need for a multi-dimensional treatment approach that considers the duration and severity of maltreatment.

Although it seems intuitive that abuse and neglect would lead to emotional trauma, lawmakers have been slow to enact legislation to protect children. Similarly, the research community has just begun to investigate the impact trauma on their social, emotional, psychological and educational functioning (Courtney et al. 1995, 2004). Social scientists, epidemiologists, social workers, developmental psychologists, and psychiatrists have uncovered resiliency in the face of overwhelming odds (Altshuler & Poertner, 2003, Berkowitz, 2005; Schofield & Beek, 2005). Children who have sustained severe and/or sustained abuse are able to develop into successful, self sufficient adults despite this exposure. Research which has focused on the degrees of abuse, sub categories of abuse, and general versus severe neglect, suggests that foster children fair worse than their non-abused counterparts in nearly all
domains, including emotional, social, physical, and developmental (Fanshell & Shinn, 1975; Pecora, Williams, Kessler, Downs, Hiripi, & Morello, 2003).

In spite of these significant bodies of research, there remains a gap in our understanding of foster youth. The relationship between resilience and educational attainment, as well as those interventions that might mitigate the effects of trauma, and abuse and neglect on academic achievement, remains an area in need of investigation.

**Educational Impact of Foster Care**

The study of foster care has a relatively short history in the United States. It is only recently that research has begun to focus on the impact of trauma, abuse and neglect on educational outcomes. In the 1970’s, Fanshell and Shinn (1978) conducted the first longitudinal study into the psychosocial impacts of foster care. The unmet educational needs of youth in out of home care are well documented in the literature (Courtney et al. 2004). The disparate outcomes of foster youth as compared to the general population are documented as well (Pecora et al. 2003, National CASA Association, 2002, The Pew Commission on Children in Foster Care, 2004, Rosenfeld, 2003 & Aldgate, Heath, Colton & Simm, 1993). They report that foster children perform one to two grade levels below their age mates in reading and math, are more often absent and truant from school, more likely to be placed in Special Education programs, to be retained a grade, to be placed in advanced placement and honors courses, or to graduate from high school. Only in recent years has the child welfare system begun looking at the causes of this disparity, and potential remedies. This includes the involvement of the child’s attorneys as advocates and an increased role of the judiciary in educational planning for foster youth (McNaught, 2002 and 2004).
Although 70% of adolescents in foster care report high expectations and educational aspirations that include college, their actual outcomes are quite different (Courtney et al. 2004). For example, McMillen, Auslander, Elze, White & Thompson (2003), found that five percent of youth surveyed planned to end their education at high school graduation, yet 1% actually completed a bachelor’s degree. It is widely understood that earning potential is correlated with level of education (Children’s Defense Fund, 2000). Thus, it might be said that a large percentage of emancipating foster youth each year are ill prepared for adulthood (Courtney et al, 2004, Pecora et al, 2003).

There are a variety of factors that impact educational attainment for foster youth. Burley and Halpern (2001) analyzed risk factors for educational completion, including grade point average, school mobility, post high school plans, school continuity, and current or previous foster care placement. Although these characteristics predicted high school completion for all students, their findings indicate that foster youth were 57% less likely to complete high school when compared to their non-foster peers, and that outcomes for these risk factors are considerably higher than their non-foster peers. In addition, Courtney et al. (2004) report that being retained a grade has a more negative impact on education and employment outcomes than poor academic performance. Since youth in foster care are more likely to experience trauma than the general population, have frequent school changes, and have behavioral problems, they are more likely to be retained (Pecora et al., 2003; Shin, 2003). Children in foster care generally experience trauma both prior to, and following, removal from their birth family. Additionally, the act of entering foster care in and of
itself is traumatic (Clausen, Landsverk, Ganger & Litrownik 1993, Fanshell & Shinn, 1978, The Pew Commission, 2004). When a child is removed from an abusive and/or neglectful situation, the child leaves behind all that is familiar: family, home, school, community and often siblings (Altshuler, 2003; Bempechat, 1998; Joiner, 2001; Lichtenberg, Lee, Helgren & Bradley, 2004). It is reasonable to expect, then, that such a child might act out in the classroom. These negative behaviors are often misinterpreted as emotional disturbance, prompting referrals for Special Education Services that often result in attempts to remove the child from the mainstream classroom (Altshuler & Kopels, 2003; Brown, 2003; Newton, Litrownik & Landsverk, 2000).

Courtney et al. (2004) also found that a disproportionate number of foster youth in out-of-home care were identified as receiving Special Education Services through either an Individualized Education Program (IEP), or a 504 Plan while in foster care. These services consist of accommodations and/or modifications to the classroom setting, curriculum, and delivery of instruction to insure the child’s right to a free and appropriate public education. They also found that 49% of youth in the study (N=732) received special education services when compared to the National average of all students in special education that ranges from 11-13%. Foster youth are identified for Special Education at three times the rate of the general population. Almost half of all youth in out of home care face some significant learning difficulties or challenges.

Finally, Crozier and Barth (2005) studied the impact of maltreatment on cognitive and academic functioning. They found that abused and neglected children
have significantly lower cognitive and academic performance, and that the duration and severity of abuse directly correlated with levels of performance. Their most significant finding, however, was the more the school knew about the nature of the child’s abuse, the better the child performed academically. This questions the well-established practice in public child welfare and public education of maintaining secrecy in order to protect a child’s best interests.

*Disproportionality and Academic Achievement*

Disproportionality refers to the rate of children of color being placed in the foster care system compared to their incidence in the general population. Children and youth of color are disproportionately represented in the foster care system (AFCARS, 2006). Of the 581,000 children in foster care in the United States in 1999 (AFCARS, 2001), 38% were African American, 17% were Latino, and two percent were Native American. Yet, African American children made up less than 13% of the U.S. population, Latinos made up 12 ½%, and Native Americans made up 1 ½% of the U.S. population (U.S. Census Bureau, 2001). In general, African American children are most likely to be overrepresented in foster care. Latino and Native American children are slightly overrepresented. However, it should be noted that in regions with large numbers of Native populations (such as Alaska), Native children are overrepresented in the child welfare system.

In California, like in the rest of the country, African Americans are disproportionately represented in foster care. They represent 6% of the total population of the state, but 28% of all children in foster care. For all students of color,
outcomes are far worse than their white counterparts (Bettencourt & Nelson-Doyle, 2004).

The issue of disproportionality and institutional racism is at the forefront of research on child welfare. The impact of race/ethnicity on all phases of child welfare involvement is substantial (Bettencourt & Nelson-Doyle, 2004). The effort to tease out contributing factors of this disproportionality has been the focus of many prominent researchers (Garland, Ellis-Macleod, Landsverk, and Ganger, & Johnson 1998, and Garland, Hough, Landsverk, McCabe, Yeh, Ganger & Reynolds, 2000) found that children of color are more likely to be removed from their families of origin, less likely to be reunified, and will have experienced more placements and school changes than their White counterparts. Families of color receive fewer services both before and after removal (Bempechat, 1998; Chibnall, Dutch, Jones-Harden, Brown, Gourdine, Smith, Boone & Snyder, 2003; & Phillips, 2002). Conger & Finkelstein (2003) found that school moves for foster children of color were often due to perceived behavioral problems. It is notable that these findings remained true even when gender, socio-economic status, race/ethnicity of the Child Protective Services Investigative Social Worker, reason for referral, and type/severity of abuse or neglect are controlled (Green, 2002).

Research has also found that there is a strong association reported between race and ethnicity and the likelihood of dropping out of school (NCES, October 1999). Children of color are much less likely to succeed in school regardless of socio-economic status (CDF, 2000).
Preparation for Adulthood and Transition Issues

There has been much research in child welfare in adult preparation and transition for foster youth (Courtney, Plavin & Grogan-Kaylor, 1995; Courtney, Terao & Bost, 2004; and Pecora, Williams, Kessler, Downs, Hiripi, &Morello, 2003). There is considerable concern for foster youth’s ability to care for themselves once they leave the child welfare system. Historically, when children age out of foster care they have been on their own. The impact of aging out is profound: high rates of welfare dependence, incarceration, and homelessness. In response, the Federal Government enacted the Chafee Independence Program (1999) which provides support for foster children when they emancipate. Provisions of this legislation include Medicaid coverage for emancipated foster youth between the ages of 18 and 21, increased allowable assets for foster youth from $1000 to $10,000, allowing foster youth to be better prepared for the transition to independence, increased training on transition preparation for foster parents, and increased adoption incentives to states to facilitate increased permanence for foster youth. In 2001, more provisions were added; including funding for Independent Living Skills preparation programs, room and board for emancipated foster youth between the ages of 18 and 21, emphasis on the identification of permanent placements for foster youth, and increased accountability for states on outcomes, and educational vouchers for emancipated foster youth enrolled in post secondary education programs.

Courtney, et al. (1995) found that nearly one third of foster youth exiting the public child welfare system were reading at or below an eighth grade reading level. McMillen and Tucker (1999) studied a cohort of 252 older foster youth who were
preparing to emancipate from foster care. The authors found that the majority left state care without a job or a high school diploma. They also found that youth who grow up in foster care have few options as they approach their eighteenth birthday. In California, for example, if a foster youth can graduate from high school by the day prior to their nineteenth birthday, then they may remain an un-emancipated minor beyond age eighteen. If however, a foster youth cannot complete a high school diploma by their nineteenth birthday; their jurisdiction is terminated the day the turn eighteen. These findings have led professionals in the child welfare, legislative and judicial systems to search for new ways to address these outcomes.

*The Intervention of the Judicial System*

The National Council of Juvenile and Family Court Judges (NCJFCJ), led by a research team, took a unique approach to addressing the problem of educational outcomes for youth in out of home care. In addition to defining the role of a Juvenile Court judge, they looked at promising practices in 23 jurisdictions that were utilizing the Child Victims Act Model Court. Jurisdictions participating in the National Child Victims Act Model Courts Project (“Model Courts”) implemented a number of reforms designed to improve educational outcomes for youth in foster care by examining their own practice in dependency cases (NCA, 2002).

The NCJFC began with a survey of judges and then interviews were conducted with Special Education Program Specialists recommended by the judges surveyed. The Program Specialists were asked to identify programs in their local jurisdictions that served the educational needs of foster youth (Litchfield, Gatowski and McKissick, 2002).
The NCJFC looked at educational achievement for youth in foster care, the judge’s role in ensuring that their educational needs are met, child welfare agencies’ emphasis on educational needs and achievement, the types of inquiries about educational needs the courts make, when educational needs become a focus, who delivers information about a youth’s educational needs to the court, existing programs, and awareness of the Chafee Foster Care Independence Act (Litchfield et al., 2002).

The NCJFC found that although the courts were engaged and interested in the educational outcomes of foster youth, many had not been getting complete information, and were not actively involved in educational planning for youth assigned to their courts. The study found that judges think educational outcomes are extremely important. Their suggestions included “a tracking system for foster youth that would allow for outcomes to be monitored, increased funding for educational advocates and liaisons, and less restrictive guidelines about school of residence for foster youth,” (Litchfield et al., 2002, p.22).

Their findings pointed to impediments to increasing educational the outcomes of foster youth, including a lack of communication between the courts, social welfare agencies, and the educational system. They also pointed to a lack of agreement that problems even exist in public education, a shortage of surrogate parents and educational advocates, confidentiality issues, and multiple school districts within jurisdictions, alternative school programs, support services, and lost educational records (Litchfield et al., 2002). Foster Youth Services Programs exist in California specifically to address the majority of the issues raised by the NCJFC study.
In January 2008, The Administrative Office of the Courts (AOC) enacted new Rules of Court that strengthened the Juvenile Court’s role in monitoring the educational progress of children and youth in foster care. The AOC is the staff agency of the Judicial Council, which has policy-making authority over the state court system. Included in these new rules are the mandatory review of educational placement and progress, educational rights holder responsibilities and educational needs at every court hearing (Administrative Office of the Courts, 2008). These rules in turn increase the amount of information that child welfare social workers must provide to the court thereby increasing the social workers monitoring of educational progress.

Legislation and Impacts

In 1973, 4 pilot programs began to offer academic interventions to students in foster care in four small school districts in Northern California. The programs expanded to two additional school districts by 1978. These pilot programs, now known as the Core Foster Youth Services Programs, were designed to address the negative educational outcomes experienced by foster youth. In 1981, the California Legislature in response to the disparate academic outcomes of foster youth (lower achievement, higher retention rates and higher truancy and dropout rates) determined that the State was responsible for addressing the academic needs of its most vulnerable citizens. The legislature mandated that foster youth receive instruction, counseling, tutoring, and related services through the Foster Youth Service’s (FYS) Core District Programs (Education Code, Sections 42920-42925). The 6 FYS Core District Programs are still operating today and provide services to all foster youth attending schools in these districts. In 1998, the Budget Act created the FYS Countywide
Programs to serve foster youth, ages four to 21, living in Licensed Children's Institutions (LCIs), otherwise known as group homes. The goals of the FYS Core District and Countywide Programs are to identify and address the educational, physical, social, and emotional needs and gaps in services for foster youth, insure the timely transfer of education and health records to insure appropriate school placements, in collaboration with community and agency partners, work to increase placement stability, student achievement, and to decrease truancy and delinquency (California Department of Education, 2005). Additionally, FYS programs serve as advocates for the educational needs of foster youth in California.

Assembly Bill 1808-The Budget Act of 2006, allowed the Legislature to expand both the target population of FYS programs, and the mandates for service provision. In amending the education code, the Legislature insured that all students in out-of-home foster care would be eligible for FYS services. Additionally, FYS programs were required to determine a methodology for determining their target population, and a hierarchy of service needs. These programs were to provide tutoring services, and a menu of other services that may include: mentoring, counseling, and transition and emancipation services (California Department of Education, 2006).

In 2004, Assembly Bill 490 (Steinberg) was enacted in California. AB 490 addressed many of the recommendations discussed above. This Bill was designed to insure that foster youth can enroll in school quickly and easily (regardless of immunization status or availability of school records). The legislation ensures that foster youth can remain at their school of origin if it is in their best interest to do so, and requires that schools calculate partial credit for work completed when they have to
change schools during the course of the school year. AB 490 also ensures that foster youth cannot be punished for court related absences (California Education Code, 48850-48853.5 & 49076 (II)). The legislation also requires all school districts and County Offices of Education in California to identify Foster Care Liaisons and mandates close communication between public education and public child welfare.

It remains to be seen if AB 490 will influence the way foster youth are treated by public education. Federal legislation has existed for some time. The Education of Homeless Children and Youth Program of The Stewart B. McKinney Homeless Assistance Act has been in place since 1987. McKinney-Vento was reauthorized in January 2002, under No Child Left Behind (National Law Center on Homelessness and Poverty, 2002). The act defines a homeless children and youth as “individuals who lack a fixed, regular, and adequate nighttime residence...” (The Stewart B. McKinney Homeless Assistance Act, 1987). Additionally, this legislation specifies that “children awaiting foster care placement’ are covered by its provisions. Neglected, delinquent, and at-risk children are identified as a sub group eligible for Title I funding (U.S. Department of Education, 2002). Further, The American Bar Association states that, “Homelessness is a lack of permanent housing resulting from extreme poverty and/or unsafe or unstable living environments (for example conditions of domestic violence or child neglect or abuse.”. They further state “unaccompanied youth within the homeless population are those youth who are unable to live with their parents for a variety of reasons” (Duffield, Haybach, & Julianelle, 2002). They also found that the main reasons for youth living away from
their parents are physical or sexual abuse, substance abuse, extreme family conflict, or neglect, yet foster youth go underserved (p.8).

Clearly, state and federal legislation is speaking of children who are in temporary housing for their own protection. In 2002, the legislation became more specific, including provisions specifically for youth in foster care. Unfortunately this legislation alone did not insure that foster youth’s educational needs were being identified, or met, in public schools. AB 490 was intended to fill this need and insure that no foster child falls through the cracks. Together the federal and state laws add the protection these youth need.

In response to the persistent need for more and direct services to students in foster care, the California Legislature modified the education code (EC 42921), authorized in Assembly Bill 1808. AB 1808 mandates that Foster Youth Services Programs increase their services to all students in foster care, regardless of placement type. Additionally, it requires Foster Youth Services to provide tutoring to as many foster youth as possible, and allows each program to determine which additional services would best meet the needs of their community. These services might include mentoring, counseling, transition services, and emancipation services (Education Code 42921).

Senate Bill 1639 (2005) allows emancipating foster youth to remain in sponsored care until age nineteen if they can complete a General Equivalency Diploma (GED, or if they can complete a vocational training program (Judicial Council of California, 2005). Yet, the implementation of a mandatory high school exit exam--the California High School Exit Exam (CAHSEE)—which began in 2005/2006
will likely cause many foster youth to be forced out of care prior to their nineteenth birthday.

Interventions

To meet the ongoing needs of foster youth, the three systems (the courts, child welfare, and education) need to work collaboratively and cooperatively. Yu, Day and Williams (2002) reported on the Child Welfare League of America’s attempts to increase the ability and capacity of the three systems to work together. To achieve this goal, the judiciary, public child welfare, and education must work collaboratively to better understanding of each other’s responsibilities and limitations in order to work together.

Yu, Day and Williams (2002) incorporated the findings of Litchfield et al. (2004), and Shin (2003), into their review of the issues impacting educational outcomes for foster youth. Their findings, conclusions and recommendations are far reaching, and refer to all three systems interacting together, and shared decision making for youth in out of home care. Their recommendations include the necessity for these systems to be involved in insuring that foster youth succeed in school and work towards postsecondary education, that all systems fulfill their obligations and insure the educational needs of foster youth, that public education insure records transfer efficiently and quickly, and that assessments are done in a timely manner.

These studies point to the dismal educational outcomes of youth in out of home care, implications on foster youth’s future employment options, and their chances for post secondary educational success. They support previous research that suggests that childhood trauma and abuse leads to poor educational outcomes. Far too many foster
youth are passing through our public schools and leaving foster care with deficits in all basic skill areas (Courtney et al. 1995 & 2004; Pecora et. al. 2003). A foster child who performs poorly in school faces many challenges on the road to becoming a productive member of society. Youth who age out of foster care, for example, already face difficult challenges, and must overcome them without the safety net of family most young people rely on.

In one national study, for example, 25% of foster youth reported they had been homeless at least one night within 4 years of emancipating from foster care, only 54% of former foster youth had completed high school and 50% of former foster youth were unemployed 12-18 months after leaving foster care (Cook, 1991). In Wisconsin, 18% of former foster youth were incarcerated after leaving foster care, and in Clark County, Nevada, 41% of foster care alumni reported spending at least one night in jail. Additional poor outcomes include increased early parenting rates, and high rates of physical and mental health concerns (Courtney & Piliavin, 1998).

In Los Angeles, the Department of Child and Family Services (DCFS), Los Angeles County Office of Education (LACOE), and Mental Health Advocacy Services (MHAS) joined forces to form a non-profit, legal advocacy organization. The Education Initiative Project placed trained education liaisons in each office to increase the knowledge and expertise of social workers regarding the educational needs of foster youth on their caseloads (Zetlin, Weinberg & Shea, 2006). This intervention had measurable impacts on four fronts: increased skill among case carrying social workers regarding the educational needs and available programs to support foster youth; increased participation of social workers in school meetings and special education
assessments; increased current education information in case files and court reports; and increased reading and math scores of foster youth who received services from their education liaisons.

Research studies recommend tutoring or remedial academic support as a way to mitigate the impact of the foster care experience. One study encourages the increase in early assessments of language delays for foster youth who have an increased incidence of such delays (Stock & Fisher, 2006). Another reviews challenges foster youth face in education (Casey Family Programs, 2004), and provide an overview of promising practices for overcoming these obstacles. Their recommendations include vocational preparation, basic skill remediation, and tutoring support, among others. The Tutor Connection Program is specifically named as a best practice. Additional research identified non-traditional approaches that can mitigate the impact of abuse and neglect. One approach involved a summer remediation program. This thematic program incorporated language and math skills to prevent students in foster care from falling further behind during the summer break (Colombey, 1995).

*Tutoring Models*

While there is a plethora of research on tutoring programs (Gordon, 2004, Kelly & Lesh, 1997, Person, Graesser, Magliano & Kreuz, 1994), there is a lack of research on effective tutoring models for children in foster care. Since foster children have many of the same risk factors as other at-risk populations (poverty, crime filled neighborhoods, family history of mental illness, and/or drug and alcohol abuse, research into models that serve at-risk students, are the most pertinent (Advocates for
This research points to the need for intensive, remedial services.

Tutoring is one-on-one teaching and is considered a highly effective method of teaching (Lepper et al., 1997, Bloom, 1984). Research into the impact of tutoring on the college student is generally positive, especially when the tutor is a subject matter expert. Under these conditions, the experience is successful in terms of its impact on achievement, student confidence; self perceived ability, and persistence (Bloom, 1984, Lepper & Chabay, 1988; Person, Graesser, Magliano, & Kreuz, 1994; Kelly & Lesh, 1997).

Tutoring programs may be administered in a variety of ways, from programs that utilize credentialed teachers, teachers trained in a specific tutoring model, programs that have volunteers as tutors, and peer tutoring models. There are specific characteristics of effective tutors for the general student population, including being proactive, having the ability to assess a tutee’s skills, including strengths and weaknesses, the ability to form a relationship, modeling appropriate behavior, tutor and tutee sharing the same learning styles, and good communication between the caregiver, tutor and tutee (Truschel, 2006). The need to determine the value of tutoring and to define tutoring as a supplement to the standard delivery of instruction is significant as well. Tutoring has traditionally been undervalued, and it is only in light of the emphasis on supplemental educational supports that has brought tutoring into the spotlight (Gordon, 2004). While these characteristics are intuitive, the author’s recommendations lack scientific rigor, and therefore, require further study.
The Center for Evaluation and Education Policy (2006) conducted a review of a tutoring program in Ohio. This longitudinal study investigated the outcomes of tutoring over a period of 6 years. The program review involved students who received both scholarships and tutoring. Unfortunately, the findings did bear out that children of color were less likely to be successful regardless of intervention (Plucker, Muller, Hansen, Ravert, & Makel, 2006). This finding is of concern for educators in that children of color are disproportionately overrepresented in foster care (Bettencourt & Nelson-Doyle, 2004, & Green, 2002).

Research into tutoring programs specific to foster children is lacking. One exception is the Strategic Tutoring Program, an evidence based model of academic intervention created by the University of Kansas, Center for Research on Learning (University of Kansas, 2000). Strategic Tutoring uses the student’s daily assignment as an opportunity to teach valuable skills and strategies for the student to become an independent learner.

According to researcher and program creator, Mike Hock (2007), “strategic tutoring can actually close the achievement gap by allowing students to make two and half years gain in one year. This intervention creates the opportunity for students to catch up, instead of them maintaining their achievement gap.” (paraphrased from training on June 26, 2007.) He further states, “Strategic Tutoring (ST) is an instructional program designed to teach students strategies for learning, and how to learn and perform while they receive help with class assignments. The main focus of ST is ensuring that students learn the techniques that allow them to perform independently in their classes. Strategic tutors co-construct, explain, model, and practice strategies with students. They also support students as they apply newly acquired skills and strategies in the context of homework and
assignment completion. Eventually, the goal is for students to apply strategies independently in a variety of contexts and with a variety of materials (Hock, 2007).

A study of the impact of strategic tutoring programs in 6 middle schools found that students receiving Strategic Tutoring outscored their peers in more traditional tutoring programs that focused on homework help. “Students in strategic tutoring earned higher grades, had significantly higher scores on measures of hope for the future, and learned more strategies than did the comparison group” (Hock, 2003).

The study presented here compared a paraprofessional tutoring model, an NCLB-approved tutoring model, and a holistic tutoring program. The data analysis that follows compares the impact of each of these three tutoring models on academic achievement, based on the results of pre and post testing of tutoring participants. The study attempts to determine which of the 3 models, if any, is the most effective for students in foster care. The goal of this study is to determine which, if any, of the three models, if any, is the most effective for students in foster care. The goal of this study is to determine which, if any of these specific programs lead to an increase in academic achievement for this population. These findings could positively impact children and youth in foster care, and other traumatized populations as well.
CHAPTER III: METHODOLOGY

This study assessed the impact of tutoring using three different tutoring models, delivered to three cohorts of students in foster care. The initial goal was to have three cohorts of fifty (50) students in each of the three tutoring models. A variety of circumstances led to the three cohorts being of unequal size, with one being smaller than the other two. The cohort sizes were 35, 44, and 9 students, respectively. The study compares outcomes for these cohorts based on their pre and post test scores on the WRAT 4. The tutors in each individual tutoring program administered pre and post testing.

In a previous study, the impact of one model, The Tutor Connection Program, was assessed using pre and post testing on the WRAT IIIR (Halcón & Lustig, 2005). This study examined the impact of the Tutor Connection program over a period of several years. Preliminary findings showed increased academic achievement as measured by the WRAT IIIR, across all subtest areas.

The present study focused on determining the differences between foster youth participation in a para-professional tutoring model, which utilizes untrained college students as tutors, a NCLB Title I supplemental program tutoring model, or a holistic tutoring model (one that views the student within the context of his/her community and has trained and certified tutors). Recent legislation and research point to tutoring as a valuable and necessary component of support services for under achieving subgroups and foster children alike (AB 490, 2004 & NCLB, 2002). This study sought to determine if one or more of these interventions increased academic achievement for
students in foster care as measured by the WRAT 4. This study attempts to answer the two research questions with the independent and dependant variables that follow: The following research questions are addressed in this study:

Question # 1: Does participation in any one of the three tutoring programs being studied increase academic achievement for students in foster care?
- Independent variable: Tutoring program participation
- Dependant variable: Academic performance as measured on the WRAT 4 pre and post testing

Question #2: Which of the three study tutorial models are most effective in increasing academic outcomes for students in foster care?
- Independent variable: The three different tutoring models (Success Inc., Tutor Connection, NCLB Title I supplemental program tutoring service)
- Dependant variable: Academic performance as measured on the WRAT 4 pre and post testing.

The study also tested the null hypothesis which states that students in foster care will not increase their academic achievement as measured on pre and post standardized WRAT 4 testing as a result of participation in any of the three tutoring models. The study is exploratory in nature; therefore there is not a working hypothesis.

The following is a summary of the research design, data collection and study sites. The study takes into account the resource limitations for serving this vulnerable population of students, as well as the time constraints due to the mobility of the population.
The methodology of the research design for this study is quantitative. It utilizes an existing database of demographic information and school history data. This study will compare the academic performance, as measured by the WRAT 4, of three cohorts of students in foster care receiving tutoring. Participants were referred for tutoring services to a Countywide Foster Youth Services program. Participants of similar age, gender, and grade level, were selected into the experimental groups. Students were enrolled into one of the three tutoring programs primarily based on the student’s home residence location. The participants who remained in the tutoring programs for the entire study period (October 2007-January 2008), and who participated in both pre and post WRAT 4 testing were included in this study.

The process of recruiting participants in the tutoring programs was accomplished in a variety of ways. Information was disseminated to all public child welfare social workers and the referral information was incorporated into the San Diego County’s Health and Human Services, Child Welfare Services’ Program Guide. Additionally, information was distributed to Voices for Children Court Appointed Special Advocates (CASA’s), Office of the Public Defender, Juvenile Division attorneys, and to all Foster Parent Associations. All school age youth in foster care living in non-relative, out of home placements, were eligible to receive services from one of these three programs. Foster Youth Services was responsible for providing NCLB Title I supplemental program tutoring services to foster youth living in group homes or foster family agency homes within the boundaries of twelve local school districts for the 2007-2008 school year. Success Inc. serves students in their general
geographic location. Since transportation to this site is not provided, all participants must have an adult transport them to and from the tutoring center.

Research Design

As stated previously, this research study examined the impact of three separate tutoring programs on student achievement as measured by the WRAT 4. There are two distinct ways to pursue this type of analysis. The first, and more traditional method, would involve combining the pre and post test scores of all participants, and conducting an analysis to see if there were any statistically significant differences. If any differences were found, then additional analyses would be conducted to tease out the significance of these differences. This would limit the number of statistical tests that are run, thereby limiting the chance of Type 1 errors: those that result in a false positive.

The second method, which was utilized in this study, involves analyzing each cohort separately, followed by additional analyses to determine which program had the largest impact on the participants. This method was selected to assess the impact of each program, determine which sub populations benefited from each model, and to assess the overall impact of all three programs. As this is a practitioner's pursuit, it was necessary to look at as many factors as possible that could identify interventions with a positive impact.

Although the addition of statistical tests increases the potential for Type 1 errors, this was a calculated risk the researcher was willing to take. In fact, a Type 1 error was preferred over a Type 2 error in this research. The researcher preferred to find that a program which had not made a positive impact had, as opposed to finding
that a program which truly was making an impact was not. The findings of this research will fuel the programmatic and funding decisions made by SDCOE, FYS in the coming years regarding which tutoring programs will be continued and which will be ended. It would be more detrimental to the students served to discontinue a promising practice.

It is often the case in research, that it is impossible to achieve random assignment of participants in a given study (Rubin & Babbie, 2005). This study utilizes a non-randomized sample without the benefit of a control group. This study did not utilize a control group due to many constraints of working with students in foster care. There were ethical concerns expressed by San Diego County Health and Human Services Agency, such as testing foster children who would not benefit from a needed intervention. Additionally, all variables could not be controlled. The primary control is the use of pretest scores for all participants prior to entering the tutorial programs. The same measure (WRAT 4) was administered and the results of the pretest were analyzed. The results of post testing were analyzed and then the findings from both analyses were compared. Analysis consisted of means and standard deviations of the pre and post test scores. In addition, changes between pre and post test scores in all sub test categories were analyzed individually and across cohorts to determine the impact of each individual program. Finally, the programs were compared to one another to determine if any had a statistically significant impact on WRAT 4 scores.

The study it is not a true experimental design; it is a multiple time-series, quasi-experimental design, utilizing quantitative research methods (Ruben & Babbie,
Descriptive and inferential statistics were used for data analysis. Pre and Post standard test scores on the WRAT 4 were analyzed. The results of these assessments were compared and their demographics analyzed.

The study matched students in foster care demographically to the extent possible. Discrepancies in the cohorts were controlled. Student achievement, as measured on the WRAT 4 prior to tutoring, was compared to their scores after receiving tutoring. The dependant variable was the WRAT 4 test scores.

As in all quasi-experimental studies there are questions about internal validity. There were a variety of external factors that impacted the performance of students. This includes school and home placement changes, test anxiety, learning disabilities (both diagnosed and undiagnosed) and emotional difficulties in their lives. In spite of these, the use of multiple groups (the tutoring center, para-professional tutoring program, and an NCLB approved tutoring model) may mitigate these threats (Rubin & Babbie, 2005). This study considered the following demographic variables:

- Gender
- Age
- Grade level
- Socio-economic status
- Special Education Eligibility
- Ethnicity

These characteristics are essential for consideration when attempting to explain phenomenon across diverse groups. These distinguishing characteristics must be studied and accounted for in any analysis. Indeed, researchers argue that the dynamics
of each of these sub categories be accounted for collectively as well as individually (Banks & Banks, 2004). The descriptive statistical analysis included the calculation of frequency, percentage, mean and standard deviation across the three groups for the characteristics listed above. This analysis described and summarized the characteristics of each of the cohorts. In addition, all analyses were conducted with students identified as eligible for Special Education Services, omitted. Inferential statistics including T-tests were utilized to analyze the results. A series of T-tests were conducted. These included aggregated and disaggregated analyses at both the individual model and larger study level. The last level of analysis involved a One-Way ANOVA to assess which (if any) of the three tutoring models had the greatest positive impact on academic functioning. This was accomplished by assessing the difference between pre and post test scores across and within programs.

Instrumentation

To measure academic success, the programs utilize pre and post testing of participants to assess program outcomes and to gauge their impact on program participants (foster youth). A limitation of utilizing the same measure for pre and post testing is the risk of score inflation based on participant familiarity with the measure itself. This is a threat to internal validity. A threat to internal validity is when the act of taking a pre-test affects how that group does on the post-test. Although there was this risk, it was mediated by having all three cohorts equally vulnerable thereby neutralizing this threat. If there was score inflation, it would be common across all three cohorts.
The three tutoring programs all utilize the WRAT 4, the Wide Range Achievement Test. This norm referenced 15-30 minute assessment of reading, spelling and arithmetic is ideal when used to determine deficiencies in order to create interventions for remediation. “Reliability for the WRAT 4 is shown to be strong and includes information based on classical test reliability theory, such as internal consistency, alternate-form (immediate and delayed retest stability), standard error of measurement, and standard score confidence intervals.” (Wilkinson & Robertson, 2006).

Table 2. WRAT 4 Subtests and Reading Composite for Age and Grade Based Samples

<table>
<thead>
<tr>
<th>Subtest/Composite</th>
<th>Age Based Sample</th>
<th>Grade Based Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>Word Reading</td>
<td>.92</td>
<td>.92</td>
</tr>
<tr>
<td>Sentence Comp</td>
<td>.93</td>
<td>.93</td>
</tr>
<tr>
<td>Reading Composite</td>
<td>.96</td>
<td>.96</td>
</tr>
<tr>
<td>Spelling</td>
<td>.91</td>
<td>.90</td>
</tr>
<tr>
<td>Math Computation</td>
<td>.89</td>
<td>.87</td>
</tr>
</tbody>
</table>

Table 2 (above) shows the Median Internal Consistency & Reliability Coefficients of WRAT 4 Subtests and Reading Composite for Age and Grade Based Samples. Such analyses confirm that “WRAT 4 validity is derived from the content and structure of the test battery, studies with special groups of individuals, and correlations with other widely used achievement and cognitive ability measures.” (Wilkinson & Robertson, 2006). The authors compared the validity and reliability of the WRAT 4 with multiple standardized assessments of academic functioning. These
included widely used assessments. The measures used for the external validity studies include WIAT®-II, SB-5, WJ®-III, WRAT-Expanded, KBIT, KTEA-II Comprehensive, WISC®-IV, KTEA-II Brief, WASI™, RIAS™, and the WAIS®-III” (Wilkinson & Robertson, 2006).

Confidentiality and Data

The subjects of this study were all students in foster care. As such, all identifying information is highly confidential. In addition to submitting University Institutional Review Board (IRB) applications, the researcher submitted an IRB application to San Diego County Health and Human Services Agency, Child Welfare Services (SDCHHS-CWS) to gain permission to utilize data collected by Foster Youth Services tutoring programs. All consent and assent forms were collected by SDCOE, FYS staff members as part of the tutorial program administration. No participant was denied services if they declined to participate in the study.

All participants were given an Identification Number by FYS staff upon enrollment. Participant’s demographic data and WRAT 4 pre and post-test results were provided to the researcher with only the above referenced identification number. Each participant was then assigned a new identification number, thereby eliminating any chance that student data could be tied to any participant. The researcher did not have participant’s names or any other identifying information at the time of data analysis, and is not involved directly or indirectly with the recruitment, assignments or oversight of participants in the tutoring programs.

Subjects
All children and youth in foster care (in non relative placements) in the County are potential subjects, thus, eligible to participate. Participants have been the victims of one or more types of child maltreatment. Program participants were in grades one through twelve, and between 6 and 18.4, years of age.

The cohorts were as similar as possible. Participants were grouped by age and grade. Students were grouped by three age ranges- 5-11 years, 12-14 years, and 15-18 years. Similarly, participants were grouped by three grade ranges- grades 1-5, grades 6-8, and grades 9-12. Participants were referred by their social workers, and/or advocates to FYS’ tutoring programs. Participants reflect the larger foster care population in the county. This means that they are disproportionately children of color (African-American) when compared to the general student population, and nearly equally represented across gender, age and grade ranges. In addition, the cohorts are over-represented by Latino students when compared to the countywide foster care population.

**Study Sites**

There were three sites for the current study. The sites were dissimilar in a variety of ways. Two models, both Tutor Connection and the NCLB Title I are home based. A third model, Success Inc. is site-based where youth receive services at a tutoring center. Since foster homes, group homes and shelter locations vary in many ways, the specific characteristics of each location vary dramatically. These include the number of children in residence, whether the student lives in a home setting or residential setting, and whether the primary substitute caregiver is a staff member, or parental figure. Each program was provided free of charge to all participants. Program
participation was completely voluntary as was participation in pre and post-testing. Students were not denied services if they refused to take either the pre or post-test.

Tutor Connection

In the fall of 2002, Casey Family Programs and CSU San Marcos, College of Education (CSUSM, COE), embarked on an innovative program to teach future teachers about the educational needs of foster youth. Called The Tutor Connection, this Program has two primary goals that have evolved over the life of the program. Its goals are to create systems change in both child welfare and public education while simultaneously offering urgently needed academic support to children in foster care. The program involves an augmented curriculum in a pre-requisite diversity course. In July 2006, administration of the Tutor Connection Program shifted from Casey Family Programs to the San Diego County Office of Education, Foster Youth Services Program. At that time, San Diego County Health and Human Services Agency, Child Welfare Services became a formal partner to the program as well. To date, the program, has taught over well over 1200 pre-teachers, providing tutoring services to approximately 1600 foster youth.

CSUSM, COE students enrolled in the pre-requisite diversity course learn about the child welfare system, the educational impact of child abuse and neglect, the foster care experience, and the unique learning needs of foster youth and other traumatized children. Additional curriculum includes lessons on professional boundaries, behavior management and proactive interventions, special education and the IEP process, and the impact of sexual abuse. Students are assigned to perform 20 hours of community service in the form of one-on-one tutoring over the semester.
The Community Service Learning component of this program allows the students to build on their classroom learning while performing their tutoring hours. Additionally they bring these experiences and reflections back to their classmates to enhance the learning for the entire class. Program participants gain real world experience by working individually with foster children. They provide tutoring assistance that ranges from remediation, to study skills, to subject specific instruction. For inclusion in this research study, Participants must receive 12 weeks of tutoring between pre and post WRAT 4 testing. Participation criteria for Tutor Connection Program include:

- Geographically located in an area where tutors reside, primarily students in the northern region of the county.
- Students and substitute caregivers must be willing to have a tutor come to their home a minimum of 2 hours per week for a college semester (10 weeks)
- Students with significant behavioral problems or severe learning disabilities are excluded from participation in this study.
- Referrals are accepted on a first-come first-served basis
- Pre-readers are excluded
- Students in grades 1-12 are accepted
- Availability of assistance with advanced courses (AP) is limited
- Availability of bilingual tutors is limited

**NCLB Title I Supplemental Program Tutoring Service**

Under NCLB, children in under achieving subgroups are entitled to additional support in order to increase their academic achievement. Specific funding is available
to local education agencies and school districts to provide these services. The intent of this funding is to provide supplemental support services for underachieving populations. These funds are mandated federally (U.S. Department of Education, 2002). Under achieving populations include children of color, English Learners, migrant children, and homeless children. Although they are not specifically identified as an under achieving subgroup within NCLB, students in foster care who reside in a licensed children’s facility are eligible for additional academic support under NCLB (U.S. Department of Education, 2002). Title I Neglected and Delinquent, is the categorical program that provides this financial support to school districts. These funds must be used to provide supplemental educational services to students who live in these facilities and therapeutic foster homes. Surveys are conducted in October of the prior school year to determine the number of eligible students in each local education agency, or school district.

Supplemental educational services can consist of a variety of academic supports including individual or group tutoring, mentoring etc. In 2006, SDCOE, FYS was asked to use these funds to serve students in foster care for 14 local school districts in the 2007/2008 school year. Eligibility for the program was based solely on residence in group homes, or foster homes that were deemed eligible in the October 2006 survey.

FYS contracted with Title I certified tutoring service providers (California Department of Education, 2002) tutoring service providers to provide in home tutoring to foster youth residing in group homes and agency foster homes within the
boundaries of 14 local school districts. These services focused on remediation of the primary content areas, including English Language Arts, and Mathematics.

SDCOE, FYS worked with the local child welfare agency, group home and therapeutic foster home providers to ensure that those students with the greatest academic need were able to access these services. SDCOE, FYS coordinated all of the referrals for tutoring, and the Title I providers assigned tutors administered pre and post tests, and monitored students’ academic progress.

Success Inc

Success Inc. is a community-based tutorial center in a low-income section of an urban southern California city. Success Inc. utilizes a holistic tutoring model, one that views the needs of the whole child within the context of his/her community. The community is largely a community of color. Many of the families are the working poor. This is a neighborhood that is undergoing grassroots revitalization. Many of the families are the working poor. Many families are impacted both by drugs and gang violence. Most schools in this region of the Unified School District are classified as under performing schools as identified by No Child Left Behind (NCLB).

This community-based program is certified by The California Department of Education to provide Supplemental Education Services (SES) under NCLB, Title I A, funding. In addition, Success Inc. offers tutorial services to the community. All students who attend Success Inc. receive a full or partial scholarship. Success Inc. remains solvent through fund raising and grant writing activities. In addition to tutorial services, and in line with their holistic philosophy, Success Inc.educates the whole child, and offers a variety of enhanced services such as support groups and Saturday
school, at no charge to the community. Success Inc. is currently providing tutoring to many students in foster care who receive 100% scholarship to participate.

Success Inc. employs a Master’s level educator (in special education) who administers the standardized assessments to all students at the Center. Students of all ages and grade levels are enrolled. Communication with participant’s teachers is frequent, and a belief that every student can achieve permeates the program. Tutorial services are delivered one-on-one, or in small groups of up to four (4) students. The program utilizes a remediation/acceleration model: the session is divided into time spent focusing on areas of basic skill deficiency, and on current grade level work.

The County Office of Education-Foster Youth Services, assisted with funding for participants who receive tutoring services at Success Inc. These scholarships are available to any student in foster care. Foster Youth Services began providing these scholarships in the fall of 2006. Some participants may be funded through a variety of sources.

Students in foster care are involved in individual and small group tutoring in the same manner as all other participating students. Participation criteria for Success Inc. includes:

- Student and family must commit to a minimum of 2-one hour sessions per week for the entire school year.
- Students must be able to get to and from the tutoring center.
- Referrals are accepted on a first-come first-served basis.
- Students must be willing to complete pre and post assessments including the Iowa Basic Skills Test and the WRAT 4.
• Students can be in grades K-12.
• Students with IEP’s and 504 Plans are accepted.
• Subjects range from grade level remediation through upper level AP courses in all subject areas.

Data Collection

The study relied on existing data maintained in the Foster Youth Student Information System (FY-SIS) that is administrated by the local FYS Program, information collected by FYS as part of the referral process, and data collected by each of the tutoring programs administered, or sponsored by FYS. The database is a collaborative effort between FYS, the child welfare authority, county probation authority, and superior court, juvenile division for the county. This web-based, secure database houses all health and education records on all students in foster care in the County.

FYS maintains Memoranda of Understanding and Court Orders allowing programs to collect and manage information on students in foster care. FYS are mandated to monitor the educational progress of foster youth in their county. FYS staff oversees and/or administrates each of the tutoring programs and provided participants and their caregivers with introduction letters and consent forms. All pre and post testing was administered as part of the tutoring programs. Tutors in each of the three programs administered the pre and post test to the student participants. Consent was given to utilize the results of the pre and post-testing. FYS is mandated to monitor the educational progress of foster youth in their county.
Data Analysis

This study utilized both descriptive and inferential statistical analyses to assess the predicted difference between participation in any of the tutorial programs, and an increase in academic achievement as measured by standardized WRAT 4 test scores. Descriptive statistics were used to describe and summarize the characteristics of each cohort, and in comparison to each other. The analysis describes the frequency, percentage, mean and standard deviation of the following demographic characteristics for the three cohorts:

- Gender
- Age
- Grade level
- Socio-economic status
- Special Education Eligibility
- Ethnicity

Inferential statistics were used to analyze the impact of tutoring on the student achievement as measured on pre and post WRAT 4 testing. Analysis included the pretest and post-test means scores, and standard deviations, both as individual analyses and as comparison samples. The analysis, which includes the T-test, examined the differences across and within groups, while searching for patterns in these differences, including:
• Paired sample T-tests were used to measure the strength of the tutoring interventions on academic performance, as measured by the WRAT 4, and to assess if the impact is linear (i.e. the student’s performance on the WRAT 4 goes up or down from pre to post testing).

• One–Way Analysis of Variance (ANOVA) compared the mean academic performance of all three cohorts. A One-Way ANOVA was used to determine which of the three programs made the greatest impact on the post- test scores.

• Cross Tabulations measured the change (percentage) scores from pre to post testing on the WRAT 4.

The analysis looked at the data in two distinct ways: First the T-test and One way ANOVA examined the continuous change score within the three programs. Next the Cross Tabulation analyzed the categorical change scores from pre-test to post-test. The T-test was used to compare two sets of data for the three cohorts in the study. Since the same students are being measured pre and post the tutoring intervention, a paired sample t-test allows for the analysis of the impact of the intervention for these three cohorts (Pallant, 2005). The T-test and ANOVA were utilized to compare the impact difference of the tutoring interventions for the three cohorts. One–way ANOVA analysis allows us to study the impact of the one independent variable (the different tutoring models) on one dependent variable (the WRAT 4 post test scores) (Pallant, 2005). The Cross Tabulations showed the percentage change difference in scores from pre to post-testing.
The study utilized the WRAT 4, a standardized, norm referenced test, administered to all participants in all tutoring programs. Norm referenced refers to a student’s performance as compared with other “like” students in the same grade from across the county (San Diego Unified School District, 2006).

Table 3. Research questions and analysis methods with findings.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data</th>
<th>Analysis</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question #1 Pre and Post WRAT 4</td>
<td>T-test on all three models Individual cohorts and combined</td>
<td>Tutor Connection had statistically significant impact on the most sub test areas of the three programs</td>
<td></td>
</tr>
<tr>
<td>Research Question #2 Pre and Post WRAT 4</td>
<td>ANOVA Cross Tabulation</td>
<td>Although there was only a statistically significant increase in the Tutor Connection Program for Reading, the majority of all participants experienced a post test score increase of more than 2 points in all sub test areas.</td>
<td></td>
</tr>
</tbody>
</table>

In Table 3 (above) the researcher presents the research questions, the data used to investigate the questions analysis conducted and the significant findings. This overview is explained in depth in the following chapter.

**Statistical Considerations**

This research studied three cohorts of students in foster care. The sample size varied between 9, 35, 44 and students, respectively, in the three cohorts. Due to the small sample sizes, sample size justification and power analysis must be discussed. With a small sample size such as this, it may not be possible to conclude that the findings can be generalized to the larger foster care population. Ultimately, the decision was made to not adjust the Alpha level (power level: p value) from the
traditional .05 to .10 or .15. This would have resulted in diminishing the findings of the study (Rubin & Babbie, 2005).

Statistical Package for the Social Sciences (SPSS)

SPSS is widely used to analyze research data in a wide variety of fields. Originally developed to make “difficult analytical tasks easier through advancements in usability and data access” (SPSS, 2008), the software enables researchers to analyze their findings relatively easily. SPSS has the capacity to run a full range of statistical analyses.

To analyze the data collected, all variables were coded and entered into SPSS. All participants’ data was coded. The researcher then assigned a new ID number to each case to ensure confidentiality. All identifying information was kept separately. Data was then disaggregated by demographic categories for statistical analyses purposes. All identifying information was removed.
CHAPTER IV: RESULTS

Students in foster care struggle academically for a variety of reasons. These reasons include the impact of child abuse and neglect on academic functioning, frequent placement and school changes, and disproportionate placement for Special Education services, among others. The intent of this study was to determine if one or more of the three tutoring models positively impacted academic performance for students in foster care, as measured by the WRAT 4 on pre and post-test scores. The larger purpose was to inform policy makers in both public education and public child welfare about effective intervention strategies for this vulnerable population. This study focused on three tutoring models administered and/or funded by The San Diego County Office of Education, Foster Youth Services Program. A quantitative, exploratory research design was employed to analyze the impact of the three tutoring models on WRAT 4 test results for three cohorts of students. Demographic, and pre and post-test score data was analyzed using SPSS to answer two research questions, and to address the null hypothesis.

**Null Hypothesis**

Students in foster care will not increase their academic achievement as a result of participation in any of the tutoring programs as measured by a WRAT 4 standardized test.

**Research Questions**

Question # 1: Does participation in any of the three tutoring programs being studied increase academic achievement for students in foster care?
Question #2: Which of the three tutorial models, if any, is most effective in increasing academic outcomes for foster children?

Initially, an SPSS database was created for the specific variables under study. Values were assigned for all variables. Demographic variables included gender, age, grade level, special education eligibility, socio-economic status, and ethnicity. Additionally, participant’s demographic data was grouped into three categories each. These include the following age and grade ranges: 5-11 years, 12-14 years and 15-18 years, and grades 1-5, grades 6-8 and grades 9-12. Dependant variables included pre and post standard and percentile scores on the WRAT 4 in the following sub test areas: Reading, Sentence Completion, Spelling, Arithmetic, and Reading Composite scores. All participant data was entered into the SPSS database after being recoded to protect the confidentiality of the study subjects. The data was checked and cleaned to ensure that all entries were accurate and that there were no outliers, or missing values.

A demographic analysis was conducted to describe the characteristics of the three groups of students to determine how similar or different the three cohorts were from each other. A second analysis involved inferential statistics, including T-test, One Way ANOVA and Cross Tabulations to measure the impact of the three tutoring models individually, compared to one another, and the change scores from pre to post testing. A discussion of the findings follows.

Initially, the intent was to have three study cohorts of 50 students in each of the tutoring models. As each of the programs traditionally serves more than 50 students...
each semester, that seemed an attainable number. Unfortunately in October 2007, San
Diego County fell victim to the largest wildfire in the County’s history. This wild fire
caused the loss of hundreds of homes, school closures countywide, and the
displacement of over 500,000 citizens, due to mandatory evacuations. This event
disrupted the lives of many students in foster care. As a result, a larger-than-expected
number of tutoring participants did not complete post testing in their respective
programs. Not surprisingly, this resulted in a lower N than expected across all cohorts.
The final N for each was: Tutor Connection-N=35, NCLB Title I-N=44 and Success
Inc.-N=9.

Descriptive Statistics

The purpose of descriptive statistics is to provide a comprehensive overview of
the demographic characteristics of study cohorts. The following provides a description
of the participant’s demographic characteristics. This analysis helps determine if the
three cohorts are similar or dissimilar to one another. This informs the procedure and
process in the analysis of the pre and post test scores. To compare the effect of the
tutoring program participants, it was necessary to know if the three groups are similar
(Ruben & Babbie, 2005). Demographic information was collected by SDCOE, FYS
staff at the time of referral, and checked for accuracy against the Foster Youth Student
Information System database, which houses the education and health information for
all students in foster care in San Diego County (University of California, Berkeley,
2007).
Table 4. Demographic Characteristics of Foster Youth Receiving Tutoring by Study

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tutor Connection</th>
<th>Title I</th>
<th>Success Inc</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Count %</td>
<td>Count %</td>
<td>Count %</td>
<td>Count %</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>60</td>
<td>26</td>
<td>59.1</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>40</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 12.4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD 3.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-11</td>
<td>16</td>
<td>45.7</td>
<td>22</td>
<td>50</td>
</tr>
<tr>
<td>12-14</td>
<td>9</td>
<td>25.7</td>
<td>14</td>
<td>31.8</td>
</tr>
<tr>
<td>15-18</td>
<td>10</td>
<td>28.6</td>
<td>8</td>
<td>18.2</td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 6.7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD 3.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>11</td>
<td>31.4</td>
<td>12</td>
<td>27.3</td>
</tr>
<tr>
<td>6-8</td>
<td>14</td>
<td>40</td>
<td>21</td>
<td>47.7</td>
</tr>
<tr>
<td>9-12</td>
<td>10</td>
<td>28.6</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Special Educ Eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible</td>
<td>9</td>
<td>25.7</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>26</td>
<td>74.3</td>
<td>33</td>
<td>75</td>
</tr>
<tr>
<td>SES (Free and Reduced)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eligible</td>
<td>35</td>
<td>100</td>
<td>44</td>
<td>100</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Af Amer</td>
<td>8</td>
<td>22.9</td>
<td>20</td>
<td>45.5</td>
</tr>
<tr>
<td>Latino</td>
<td>14</td>
<td>40</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>White</td>
<td>11</td>
<td>31.4</td>
<td>12</td>
<td>27.3</td>
</tr>
<tr>
<td>Pacific Islander/Asian</td>
<td>2</td>
<td>5.7</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Percentage of total study participants with pre and post test scores</td>
<td>35</td>
<td>60</td>
<td>44</td>
<td>61</td>
</tr>
</tbody>
</table>

Table 4 (above) shows three cohorts of students in foster care receiving tutoring services in one of the three models. The number and percentage of students in each category is listed. Additionally the mean age (12.4) and grade level (6.7) including standard deviation difference for these two categories is included. The single variable that applied to all study participants was socio-economic status. Low socio
economic status was defined as qualification for free or reduced price lunch within the public school system. Since 100% of all children in foster care qualify for free or reduced price lunch, they are thus considered low socio-economic status.

Also, Table 4 (above) shows that the Tutor Connection Program consisted of 35 students: 60% males and 40% female. 45.7% were between 5-11 years of age, 25.7% were between 12-14 years of age, and 28.6% were between 15-18 years of age. In this cohort, 25.7% of the students were identified as eligible to receive Special Education services. The grade level distribution was as follows: 31.4% were in grades 1-5, 40% were in grades 6-8, and 28.6% were in grades 9-12. The ethnic breakdown of program participants was: 22.9% African American, 40% Latino, 31.4% White and 5.7% Pacific Islander/Asian.

The second cohort, NCLB Title I Certified Tutoring Program, consisted of 35 students: 59.1% males and 40.9% female. 50% were between 5-11 years of age, 31.8% were between 12-14 years of age, and 18.2% were between 15-18 years of age. In this sample 25% of the students were identified as eligible to receive Special Education services. The grade level distribution was as follows: 27.3% were in grades 1-5, 47.7% were in grades 6-8, and 25% were in grades 9-12. The ethnic breakdown of program participants was: 45.5% African American, 25% Latino, 27.3% White, and 2.3% Pacific Islander/Asian.

A third tutoring program, Success Inc., consisted of 9 students: 77.8% males and 22.2% female. 33.3% were between 5-11 years of age, 22.2% were between 12-14
years of age, and 44.4% were between 15-18 years of age. In this sample, 11% of the students were identified as eligible to receive Special Education services. The grade level distribution was as follows: 33.3% were in grades 1-5, 22.2% were in grades 6-8, and 44.4% were in grades 9-12. The ethnic breakdown of this Program was: 88.9% African American, 11.1% Pacific Islander/Asian, with no White or Latino participants.

Table 5 (below) shows that the mean age of participants: Tutor Connection, 12.45; NCLB Title I, 12.31; and Success Inc., 12.9. The mean age across all three cohorts was 12.43 years. In addition, Table 5 shows the age range of participants in the programs, and the range of ages (standard deviation) within each program.

Table 5. Age of Program Participants

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tutor Connection</td>
<td>35</td>
<td>12.4537</td>
<td>3.28970</td>
<td>6.70</td>
<td>18.0</td>
</tr>
<tr>
<td>2 Title I Neglected</td>
<td>44</td>
<td>12.3168</td>
<td>2.76885</td>
<td>7.60</td>
<td>18.4</td>
</tr>
<tr>
<td>3 Success Inc.</td>
<td>9</td>
<td>12.9000</td>
<td>3.60382</td>
<td>7.80</td>
<td>17.3</td>
</tr>
<tr>
<td>Total</td>
<td>88</td>
<td>12.4309</td>
<td>3.04012</td>
<td>6.70</td>
<td>18.4</td>
</tr>
</tbody>
</table>

Table 6 (below) shows that the mean grade level for participants was: Tutor Connection 6.9; NCLB Title I, 6.5; and Success Inc., 7.0. The mean grade level across all three cohorts was 6.7.
Table 6. Grade level of Program Participants

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tutor Connection</td>
<td>35</td>
<td>6.9429</td>
<td>3.29833</td>
<td>1.00</td>
<td>12.00</td>
</tr>
<tr>
<td>2 Title I Neglected</td>
<td>44</td>
<td>6.5682</td>
<td>2.83170</td>
<td>2.00</td>
<td>12.00</td>
</tr>
<tr>
<td>3 Success Inc.</td>
<td>9</td>
<td>7.0000</td>
<td>3.57071</td>
<td>2.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Total</td>
<td>88</td>
<td>6.7614</td>
<td>3.07004</td>
<td>1.00</td>
<td>12.00</td>
</tr>
</tbody>
</table>

Further description involved the analysis of frequencies, percentages, mean, median, standard deviation, and minimum and maximum for all demographic characteristics across the three cohorts. Cross tabulations were used to determine the occurrence across and between the cohorts. In addition, Pearson Chi-square tests determined whether any statistically significant differences existed between the three cohorts. There were no statistically significant differences between cohorts for the majority of demographic characteristics studied, including gender, age, grade level, special education eligibility, or socio-economic status.

A Pearson Chi-Square analysis did reveal a statistically significant difference (p<.01) for ethnicity between the three cohorts. (v=16.675, df 6, p=.011). Note that there has been extensive research into the Disproportionality of children of color in the foster care system (Garland, Ellis-Macleod, Landsverk, and Ganger, & Johnson 1998, and Garland, Hough, Landsverk, McCabe, Yeh, Ganger & Reynolds, 2000). Study participants were largely African American and Latino. Indeed, in one cohort, Success Inc., all but one participant was African American. Clearly, children and youth of color represent the vast majority of all children in foster care in San Diego County. While it is possible that a disproportionate number of children of color are referred for
tutoring services, the participants do represent the larger foster care population both in San Diego County, and in California.

Table 7. Demographic Data: Chi-Square to Determine Statistically Significant Differences—All Study Participants

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Significance (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>1.146</td>
<td>2</td>
<td>.564a</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>3.204</td>
<td>4</td>
<td>.524a</td>
</tr>
<tr>
<td>Grade Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>2.371</td>
<td>4</td>
<td>.668a</td>
</tr>
<tr>
<td>Special Education Eligibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>.903</td>
<td>2</td>
<td>.637a</td>
</tr>
<tr>
<td>Grade Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>2.371</td>
<td>4</td>
<td>.668a</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>16.675</td>
<td>6</td>
<td>.011b*</td>
</tr>
</tbody>
</table>

\(a\) = no statistically significant difference between study cohorts in terms of gender. 
\(b\) = There is a statistically significant difference between study cohorts in terms of ethnicity.

Table 7 (above) shows that both the smaller sample size of the third cohort, and the distinct ethnic makeup of this cohort of students. A mentioned previously, Success Inc. is located in a large urban area that is predominantly a community of color. This is reflected in the ethnic representation of the study participants. The outcomes of the analysis determined that there was a statistically significant difference in the ethnic composition of the three cohorts. Additionally, this cohort appears to differ in gender, age and grade distribution from the first two cohorts, although not in
a statistically significant way. The impact of the small sample size must be considered in this circumstance.

Table 8. Ethnicity in Tutor Connection and NCLB Title I

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Count</th>
<th>% within Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>8</td>
<td>28.6%</td>
</tr>
<tr>
<td>Latino Or Hispanic</td>
<td>14</td>
<td>56.0%</td>
</tr>
<tr>
<td>White</td>
<td>11</td>
<td>47.8%</td>
</tr>
<tr>
<td>Polynesian Or Pacific Islander</td>
<td>2</td>
<td>66.7%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>44.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Count</th>
<th>% within Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>20</td>
<td>71.4%</td>
</tr>
<tr>
<td>Latino Or Hispanic</td>
<td>11</td>
<td>44.0%</td>
</tr>
<tr>
<td>White</td>
<td>12</td>
<td>52.2%</td>
</tr>
<tr>
<td>Polynesian Or Pacific Islander</td>
<td>1</td>
<td>33.3%</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>55.7%</td>
</tr>
</tbody>
</table>

Table 8 (above) shows the ethnic distribution in Tutor Connection and NCLB Title I. Note that there was no statistically significant difference in ethnicity between cohort 1 (Tutor Connection) and cohort 2 (NCLB Title I). Based on the findings demonstrated in Tables 7 and 8 (above) the small sample size and high representation of African-American youth in the Success Inc. cohort contributed to statistically significant difference in ethnicity among study participants. Table 9 (below) shows the lack of statistical significance in ethnic representation within the Tutor Connection and NCLB Title I tutoring programs.
Table 9. Ethnicity: Tutor Connection and NCLB Title I-Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>4.918(a)</td>
<td>3</td>
<td>.178a</td>
</tr>
</tbody>
</table>

a= no statistically significant difference

Inferential Statistics

The intention of tutoring programs is to increase student achievement. This study was designed to determine if any of the three tutoring models available to students in foster care through SDCOE, FYS improved foster student’s academic achievement. The following discussion addresses two research questions in this study. In order to assess the impact of the tutoring programs, pre and post-test WRAT4 scores were analyzed, including T-tests, One-Way ANOVA’s, and Cross Tabulations.

Research Question 1

Does participation in the three tutoring programs being studied increase academic achievement for students in foster care?

To answer Research question 1, the impact of each tutoring model had to be measured. T-tests and ANOVA are parametric tests that assume at least one variable being studied has an interval, and that the distribution of these variables is normal. T-tests are used when a variable has two categories; in this case, pre and post WRAT4 test scores. The ANOVA and Cross Tabulations compared the difference scores (post
minus pre). It determines whether or not there is a statistically significant difference among the means of the difference scores for the three programs, and if so, which programs are different from each other. Once the T-tests determined which scores had significant change within each program, the One Way ANOVA and Cross Tabulations could be applied (Rubin & Babbie, 2005).

Pre and post-test WRAT 4 scores were analyzed using a T-test. Raw score, standard score, percentile score, and grade level score were analyzed. Only the standard and percentile scores are reported here.

A standard score is derived from the raw score. The standard score is set with a mean (or average) of 100. Percentile scores compare how the participant scored in relationship to other students his or her age. Means and standard deviations for standard and percentile scores were derived in all sub test categories, for all three cohorts, including reading, sentence completion, spelling, arithmetic, and reading composites.

Mean post-test scores increased in all sub test areas, in all three cohorts. The only exception was spelling in the Tutor Connection cohort. (pre-test mean=36.83, SD 31.90; post-test mean=20.34, SD 31.18).
Table 10. Comparison of pre and post WRAT Standard scores in sub test Areas

<table>
<thead>
<tr>
<th>Sub Test</th>
<th>Tutor Connection</th>
<th>Title I</th>
<th>Success Inc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Pre Stan Reading</td>
<td>35</td>
<td>94.00</td>
<td>14.56</td>
</tr>
<tr>
<td>Post Stan Reading</td>
<td>35</td>
<td>103.54</td>
<td>23.07</td>
</tr>
<tr>
<td>Pre Stan Sent Comp</td>
<td>35</td>
<td>93.09</td>
<td>13.04</td>
</tr>
<tr>
<td>Post Stan Sent Comp</td>
<td>35</td>
<td>97.60</td>
<td>16.92</td>
</tr>
<tr>
<td>Pre Stan Spelling</td>
<td>35</td>
<td>92.40</td>
<td>17.55</td>
</tr>
<tr>
<td>Post Stan Spelling</td>
<td>35</td>
<td>94.86</td>
<td>17.48</td>
</tr>
<tr>
<td>Pre Stan Arithmetic</td>
<td>35</td>
<td>94.00</td>
<td>17.55</td>
</tr>
<tr>
<td>Post Stan Arithmetic</td>
<td>35</td>
<td>98.43</td>
<td>17.48</td>
</tr>
<tr>
<td>Pre Stan Read Comp</td>
<td>35</td>
<td>92.46</td>
<td>13.72</td>
</tr>
<tr>
<td>Post Stan Read Comp</td>
<td>35</td>
<td>99.91</td>
<td>19.74</td>
</tr>
</tbody>
</table>

Table 10 (above) compared the mean pre and post-test scores in all sub test areas to determine if there were any statistically significant differences within the three cohorts. Table 11 (below) displays the findings of statistical significance (and lack there of) for the three programs in the sub test areas. Participants in the Tutor Connection Program showed a statistically significant increase in post test WRAT 4 scores at the p<.001 level in the following areas: Standard Reading (p=.000) and Standard Reading Composite (p=.000). A statistically significant increase in scores at the p<.05 level was found in Standard Sentence Completion (p=020), and Standard Spelling scores (p=.028).

Participants in NCLB Title I Program showed a statistically significant increase in post test WRAT 4 scores at the p<.05 for Standard Sentence Completion
(p= .028) and Standard Reading Composite. (p=.010). Participants in the Success Inc. Program showed no statistically significant increases in post test WRAT 4 scores

Research into tutoring models for at-risk youth point to the need for intensive, one-on-one tutoring (Advocates for Children of New York, 2003, Collins, Onwuegbuzie, 2001, and Williams, 2002). It would appear that the three models under study, two of which are home based, are providing that intervention. This appears to be so even in sub test areas where results are not statistically significant. It is important to note that an increase in academic skills can be very relevant in the life of a foster student even if it is not statistically significant.
Table 11. Comparison of Paired Differences in Pre and Post WRAT 4 Standard Scores in Sub Test Areas.

<table>
<thead>
<tr>
<th></th>
<th>Tutor Connection</th>
<th>Title I</th>
<th>Success Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t Value</td>
<td>df</td>
<td>Sig (2-tailed)</td>
</tr>
<tr>
<td>Pre/Post Standard Reading</td>
<td>-3.877</td>
<td>34</td>
<td>.000***</td>
</tr>
<tr>
<td>Pre/Post Standard Sent Comp</td>
<td>-2.446</td>
<td>34</td>
<td>.020*</td>
</tr>
<tr>
<td>Pre/Post Standard Spelling</td>
<td>-2.296</td>
<td>34</td>
<td>.028*</td>
</tr>
<tr>
<td>Pre/Post Standard Arith</td>
<td>-1.981</td>
<td>34</td>
<td>.056</td>
</tr>
<tr>
<td>Pre/Post Standard Reading Composite</td>
<td>-3.914</td>
<td>34</td>
<td>.000***</td>
</tr>
</tbody>
</table>

* = p<.05  *** = p<.001

Children in foster care are disproportionally referred to and made eligible for Special Education services (Edward S. Muskie School of Public Service (1999). T-tests were conducted to determine the impact of Special Education eligibility. The sample size, after removing all participants who were identified as eligible for Special Education services, was adjusted as follows: Tutor Connection N=25, NCLB Title I N=32 and Success Inc. N=7.

Table 12 (below) shows that participants in the Tutor Connection Program, (with students eligible for Special Education services removed), showed a statistically significant increase in post test WRAT 4 scores at the p<.01 level in the following areas: Standard Reading (p=.008) and Standard Reading Composite (p=.006), Standard Sentence Completion (p=.007), and Standard Reading Composite (p=.002).
A statistically significant increase in scores at the p<.05 level was found in Standard Spelling (p=.012).

In addition, Table 12 (below) shows pre and post-test scores on the WRAT 4 for participants in NCLB Title I Program, showed no statistically significant difference in any sub test area with students eligible for Special Education services removed. Participants in the Success Inc. tutoring model, (with students eligible for Special Education services removed), showed a statistically significant increase in post test WRAT 4 scores at the p<.001 level in Standard Spelling (p=.002).

### Table 12. Comparison of Paired Differences-Pre and Post WRAT Standard Scores minus Special Education Eligible Students.

<table>
<thead>
<tr>
<th></th>
<th>Tutor Connection</th>
<th>NCLB Title I</th>
<th>Success Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t Value df Sig</td>
<td>t Value df Sig</td>
<td>t Value df Sig</td>
</tr>
<tr>
<td>Pre/Post Stan Reading</td>
<td>-2.898 25 .008**</td>
<td>-1.173 32 .249</td>
<td>-2.098 7 .074</td>
</tr>
<tr>
<td>Pre/Post Stan Sentence Completion</td>
<td>-2.931 25 .007**</td>
<td>-1.229 32 .228</td>
<td>-1.317 7 .229</td>
</tr>
<tr>
<td>Pre/Post Stan Spelling</td>
<td>-2.697 25 .012*</td>
<td>-.390 32 .699</td>
<td>-4.630 7 .002**</td>
</tr>
<tr>
<td>Pre/Post Stan Arithmetic</td>
<td>-1.501 25 .146</td>
<td>.949 32 .350</td>
<td>-.604 7 .565</td>
</tr>
<tr>
<td>Pre/Post StanReading Compos</td>
<td>-3.489 25 .002**</td>
<td>-1.732 32 .093</td>
<td>-1.825 7 .111</td>
</tr>
</tbody>
</table>

*** p< .001   ** p < .01, * p < .05 (Matched Pair T-Test)
Research Question 2

Which of the three study tutorial models are most effective in increasing academic outcomes for students in foster care?

Table 13 (below) shows the findings of the One-Way ANOVA that was employed to address research question #2. The majority of this analysis omitted the standard scores in both spelling and arithmetic because there was not a statistically significant difference in subtests between cohorts. The One-Way ANOVA determined the average (mean) difference in points earned by program participants in the remaining 6 subtest categories. This was the average score change found in each of the three cohorts. There were point increases on the post test WRAT 4 scores in all subtest areas with the increases found in descending order as follows: Reading Standard Score difference – Tutor Connection (mean = 9.54), Success Inc. (mean = 6.88), and Title I (mean = 2.25), Sentence Completion Standard Score difference – Success Inc. (mean = 7.88), Tutor Connection (mean = 4.51), and Title I (mean = 3.43), and Reading Composite Standard Score Differences Success Inc. (mean = 7.88), Tutor Connection (mean = 5.45), and Title I (mean = 3.04). It is important to note that the smaller sample size of Success Inc. may have impacted the mean percentage of score difference in comparison to the two larger cohorts. This possibility was tested using the ANOVA that follows in Table 13.
Table 13. Score Change Difference - Post WRAT 4 Standard Scores from Pre Test Scores.

<table>
<thead>
<tr>
<th>Sub Test</th>
<th>Model</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Standard</td>
<td>Tutor Connection</td>
<td>35</td>
<td>9.543</td>
<td>14.56</td>
<td>2.46</td>
</tr>
<tr>
<td>Score Difference</td>
<td>NCLB Title I</td>
<td>44</td>
<td>2.250</td>
<td>9.25</td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td>9</td>
<td>6.889</td>
<td>9.86</td>
<td>3.28</td>
</tr>
<tr>
<td>Sentence Completion</td>
<td>Tutor Connection</td>
<td>35</td>
<td>4.514</td>
<td>10.92</td>
<td>1.84</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>44</td>
<td>3.432</td>
<td>10.03</td>
<td>1.51</td>
</tr>
<tr>
<td>Difference</td>
<td>Success Inc.</td>
<td>9</td>
<td>7.889</td>
<td>18.07</td>
<td>6.02</td>
</tr>
<tr>
<td>Reading Composite</td>
<td>Tutor Connection</td>
<td>35</td>
<td>7.457</td>
<td>11.27</td>
<td>1.90</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>44</td>
<td>3.045</td>
<td>7.46</td>
<td>1.12</td>
</tr>
<tr>
<td>Difference</td>
<td>Success Inc.</td>
<td>9</td>
<td>7.889</td>
<td>13.20</td>
<td>4.40</td>
</tr>
</tbody>
</table>

Table 14 (below) shows the difference between the cohorts and the difference between and across the cohorts. Two score differences tested as statistically significant (p=.05). Reading Standard Score difference (p=.025), and Reading Percentile Score difference (p=.031). Although the mean score differences in Table 13 appear significant, they are not statistically significant. This finding will be discussed in the following chapter.
Table 14. Change Score Difference Between and Within Program Cohorts

<table>
<thead>
<tr>
<th>Sub Test</th>
<th>Mean square</th>
<th>F</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Standard Score Difference</td>
<td>Between groups 526.400</td>
<td>3.833</td>
<td>.025*</td>
</tr>
<tr>
<td></td>
<td>Within groups 137.339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sentence Completion Standard Score Difference</td>
<td>Between groups 75.332</td>
<td>.582</td>
<td>.561</td>
</tr>
<tr>
<td></td>
<td>Within groups 129.370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Composite Standard Score Difference</td>
<td>Between groups 223.417</td>
<td>2.341</td>
<td>.102</td>
</tr>
<tr>
<td></td>
<td>Within groups 95.429</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p=.05

Post hoc methods are applied following a T-test in order to control for Type I errors. Type I errors lead to findings that are a false positive. For the purposes of this study a Type I error would find, incorrectly, that a tutoring program that was not making an impact, in fact, was.

Table 15 (below) displays a Post Hoc Bonferroni analysis of multiple comparisons of the mean score difference of Standard Reading scores that were analyzed for the three cohorts. The purpose of this analysis was to determine, which, if any, of the three programs showed a statistically significant increase in the Reading Standard scores. That is to say, that each program’s mean increase was measured against the other two programs to determine if the mean score difference was statistically significant.

Tutor Connection was the only program that showed a statistically significant (p=.05) score difference (mean difference=7.2929*, p=.022) when compared with both Title I, and Success Inc. Additional One-Way ANOVA’s were performed with The Title I cohort removed, however no statistically significant differences were
found. This finding seems to infer that although the outcomes seem to vary greatly from cohort to cohort, these variances are not, for the most part, statistically significant. Clearly all three tutoring programs appear to have raised scores in a majority of sub test areas; however, the increases were not proven to be statistically significant in the majority of areas. As mentioned earlier, the small sample size of the study cohorts may have a direct impact on the significance of the study findings.

Table 15. Bonferroni Multiple Comparisons Mean Difference of WRAT 4 Score increases

<table>
<thead>
<tr>
<th>Dependant Variable: Subtest</th>
<th>Study ID</th>
<th>Study ID</th>
<th>Mean Difference</th>
<th>Std Error</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>1 Tutor Conn</td>
<td>2 Title I</td>
<td>7.2929(*)</td>
<td>2.6543</td>
<td>.022*</td>
</tr>
<tr>
<td>Standard Score</td>
<td>2 Title I</td>
<td>1 Tutor Connection</td>
<td>-7.2929(*)</td>
<td>2.6543</td>
<td>.022*</td>
</tr>
<tr>
<td>Difference</td>
<td>3 Success Inc.</td>
<td>1 Tutor Connection</td>
<td>-2.6540</td>
<td>4.3799</td>
<td>1.000</td>
</tr>
</tbody>
</table>

In Table 16 (below), participants’ scores were ranked according to the following: 1= worse (< =-2) 2 Same (-1, 0, +1), Better (> =+2). These rankings represented the point increase student’s achieved in post testing based on their pre test scores. These rankings determined which of the tutoring models made the largest percentage difference for the participant’s WRAT 4 post test scores. Pre test scores represent Time I, while post test scores represent Time 2. In addition, Chi-Square tests were applied to determine statistical significance of these differences. The majority of study participants in all three cohorts improved their scores by 2 or more points in all
the sub test categories (with the exception of standard spelling). However, not one of these increased were statistically significant.

Table 16. Change Score Difference Percentages Between Program Cohorts

<table>
<thead>
<tr>
<th>Sub test</th>
<th>Count &amp; %</th>
<th>ITC</th>
<th>2 T I</th>
<th>S Inc.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Worse (&lt;=-2)</td>
<td>Count</td>
<td>9</td>
<td>12</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>25.7%</td>
<td>27.3%</td>
<td>11.1%</td>
<td>25%</td>
</tr>
<tr>
<td>2 Same (-1,0,+1)</td>
<td>Count</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>5.7%</td>
<td>13.6%</td>
<td>22.2%</td>
<td>11.4%</td>
</tr>
<tr>
<td>3 Better (&gt;=+2)</td>
<td>Count</td>
<td>24</td>
<td>26</td>
<td>6</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>68.6%</td>
<td>59.1%</td>
<td>66.7%</td>
<td>63.6%</td>
</tr>
<tr>
<td><strong>Sentence Comp</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Worse (&lt;=-2)</td>
<td>Count</td>
<td>8</td>
<td>11</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>22.9%</td>
<td>25.0%</td>
<td>22.2%</td>
<td>23.9%</td>
</tr>
<tr>
<td>2 Same (-1,0,+1)</td>
<td>Count</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>14.3%</td>
<td>20.5%</td>
<td>11.1%</td>
<td>17.0%</td>
</tr>
<tr>
<td>3 Better (&gt;=+2)</td>
<td>Count</td>
<td>22</td>
<td>24</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>62.9%</td>
<td>54.5%</td>
<td>66.7%</td>
<td>59.1%</td>
</tr>
<tr>
<td><strong>Arithmetic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Worse (&lt;=-2)</td>
<td>Count</td>
<td>9</td>
<td>20</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>25.7%</td>
<td>45.5%</td>
<td>22.2%</td>
<td>35.2%</td>
</tr>
<tr>
<td>2 Same (-1,0,+1)</td>
<td>Count</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>11.4%</td>
<td>9.1%</td>
<td>.0%</td>
<td>9.1%</td>
</tr>
<tr>
<td>3 Better (&gt;=+2)</td>
<td>Count</td>
<td>22</td>
<td>20</td>
<td>7</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>62.9%</td>
<td>45.5%</td>
<td>77.8%</td>
<td>55.7%</td>
</tr>
<tr>
<td><strong>Reading Comp</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Worse (&lt;=-2)</td>
<td>Count</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>17.1%</td>
<td>15.9%</td>
<td>22.2%</td>
<td>17.0%</td>
</tr>
<tr>
<td>2 Same (-1,0,+1)</td>
<td>Count</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>14.3%</td>
<td>22.7%</td>
<td>11.1%</td>
<td>18.2%</td>
</tr>
<tr>
<td>3 Better (&gt;=+2)</td>
<td>Count</td>
<td>24</td>
<td>27</td>
<td>6</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>% within study ID</td>
<td>68.6%</td>
<td>61.4%</td>
<td>66.7%</td>
<td>64.8%</td>
</tr>
</tbody>
</table>

One mandate of No Child Left Behind is to increase proficiency in Language Arts and Arithmetic. A total of 68.6% of the participants in Tutor Connection improved their Standard reading scores by 2 or more points. Overall, all three programs saw an increase of two or more points for 63.6% and 61.4% of the participants in Standard Reading (Title I-59.1% and Success Inc.-66.7%). In Arithmetic, 55% of all participants improved their Standard Arithmetic score by two
or more points, Tutor Connection had 62.9% of participants improve by two or more points. NCLB Title I had 45.5% of participants improve by two or more points. Success Inc. had 77.8% of participants improve by two or more points. These seem to be significant gains albeit, not statistically so. Table 17 (below), shows sub test Standard Score differences. This analysis identifies if the change score difference is significant. Note that there are no statistically significant increases, for any cohort, in any sub test.

Table 17. Score Difference in Sub test Standard Scores

<table>
<thead>
<tr>
<th>Sub Test</th>
<th>Value</th>
<th>df</th>
<th>Significance (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Standard</td>
<td>3.199</td>
<td>4</td>
<td>.525a</td>
</tr>
<tr>
<td>Score Difference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sentence Comp</td>
<td>1.016</td>
<td>4</td>
<td>.907a</td>
</tr>
<tr>
<td>Standard Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arithmetic</td>
<td>5.606</td>
<td>4</td>
<td>.231a</td>
</tr>
<tr>
<td>Standard Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Composite</td>
<td>1.377</td>
<td>4</td>
<td>.848a</td>
</tr>
<tr>
<td>Standard Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a* = no statistically significant difference between study cohorts in terms of gender

**Null Hypothesis**

The Null Hypotheses was rejected in this study. Although many of the impacts did not prove to be statistically significant, the study did find that the tutoring programs made a positive impact on academic functioning as measured by the WRAT 4.
In summary, a small sample size impacted the findings of this study. One cohort was markedly smaller than the other two, with only 9 participants. The others were 35, and 44, respectively. In spite of this, all three tutoring programs had an impact on the student achievement of the students in foster care who received tutoring services, although the vast majority of this impact was not statistically significant. The Tutor Connection Program did have a statistically significant impact on the Standard Reading scores of its participants. A further discussion, including policy implications and recommendations for further study, follows.
CHAPTER V: DISCUSSION

Students in foster care struggle academically due to the impact of abuse, neglect and trauma. The effect of these experiences coupled with frequent home and school placement changes often challenge public education, and public child welfare systems’ ability to improve their educational outcomes. The focus of this study was to explore the impact of three tutoring models offered to students in foster care by San Diego County Office of Education, Foster Youth Services Program. The intent was to determine if any of these programs had a positive impact on student achievement, and if so, which one had the most significant impact. The intent of this research is to inform leaders in the realms of public education, public child welfare, the judiciary and the legislature. This study attempted to answer two research questions, and to address a null hypothesis. The outcomes of this research are reported here, including the significance of the findings, practice and policy implications, study limitations, and recommendations for further study.

Summary of Results

Disparate outcomes for children and youth in foster care have been studied for four decades in a variety of settings (Fanshell & Shinn, 1978, Clausen et al., 1998, Davis & Ellis-McCleod, 1994, Garland et al., 2000, & Newton et al., 2000). Research has primarily focused on social, emotional, health, behavioral, and psychological well-being of foster children. More recently, research has begun to emerge on educational outcomes of students in foster care (Burley & Halpern, 2001, Crozier & Barth, 2005,
Joiner, 2001, Lichtenberg et al., 2000 & Litchfield et al., 2002). This study builds on extant research by attempting to identify specific interventions that increase academic outcomes for this vulnerable population.

The issue of sample size in this study must be addressed. The intent of the researcher was to include 50 participants in each tutoring model. Ultimately, this was not possible. Several factors, which are discussed here, influenced the sample size. SDCOE, FYS has administered tutoring programs for several years. The average percentage of participants in past years who completed both pre and post testing was approximately 80%. This year, the rate dropped to 60% for The Tutor Connection Program, 60% for the NCLB Title I and 70% for Success Inc. Reasons for incomplete post-testing ranged from participants refusing to participate (N=22), change of placement which led to discontinuing their participation in the program (N= 18), and inconsistent participation in tutoring, to less than 12 weeks between pre and post testing dates (N= 19).

The most significant external factor affecting the cohorts of participants was the widely publicized wildfire that swept through San Diego County in October 2007. The fire caused 500,000 people to be evacuated, with many living in temporary shelters for up to two weeks. All public schools in the County were closed for a minimum of one week; other schools were closed for two weeks or more. This event had a dramatic impact on many residents, including children and youth in foster care. It is impossible to gauge the impact of such an event on an already traumatized population. Many of these students changed foster care placements as a result of the
fire. Similarly, it is unclear if the large number of refusals were a result of this event. It is clear that one criterion which involved the students receiving 12 weeks of tutoring between pre and post testing was not met for a number of the participants. Students who started later in the school year, or those who had missed sessions due to conflicts in schedule or illness, did not meet this criteria. In addition, tutoring ceased during the wild fires thereby impacting all three programs. This is the first time that there has been an interruption of this magnitude to the programming offered by SDCOE, FYS. All findings of this study, thus, must be viewed in the context of this event, and with the understanding that the impact of these events cannot be measured or controlled for.

The participants in the three cohorts were similar in all demographic categories, with the exception of ethnicity. When compared to one another, no statistically significant differences were found for gender, age, grade level, special education eligibility, or socioeconomic status. It is important to note that virtually all children and youth in foster care qualify for free or reduced price lunch, the qualifying characteristic used in this study to define low socio-economic status. As stated previously, 100% of the participants in this study met those criteria. The population also reflects the larger foster care community in San Diego County, with children of color over represented when compared to the general population. The cohort’s participants in total were 61.4% males and 38.6% female. The mean age of participants was 12.43 years and the mean grade level was 6.76 (six grade, seventh month). The participants were grouped into three categories for age and grade level. Analysis of the representation across the three cohorts consistently found no
statistically significant difference among the cohorts. While the percentage of students eligible for special education services varied from a high of 25.7% (Tutor Connection) to a low of 11% (Success Inc.). The mean was 23.9% for all eligible participants.

Ethnicity of program participants suggests a statistically significant difference in the student receiving services provided by Success Inc. when compared to those being served by Tutor Connection or NCLB Title I tutoring. While Tutor Connection and NCLB Title I tutoring had a distribution of students across all ethnic groups, 88.9% of the students were African American in Success Inc. This is two to three times the percentage of African American students in the other two programs (Tutor Connection 22.9%, NCLB Title I 45.5%) This led to a statistically significant difference among programs (p<.05, p=.011). When the analysis was run omitting Success Inc., no statistically significant difference was found between the remaining two programs. There are many possible explanations for this difference. First, Success Inc. is located in a predominately African American community in San Diego County. In addition, Success Inc. is the only program of the three that is site based. The remaining programs involved home based services where tutoring is provided in the student’s home. And, transportation is not provided by Success Inc. Thus, students must be dropped off and picked up from each tutoring session. It is reasonable to assume that those families and providers in the immediate geographic location would be most likely to utilize this program. Once the demographics of the population had been analyzed, the impact of the tutoring models on academic achievement (as measured by the WRAT 4) could be studied.
The results of a quantitative analysis found that academic achievement among students in foster care can be improved when they have access to one-on-one tutoring. This finding rejects the null hypothesis and addresses the first research question. Indeed, in all three tutoring models, students in foster care made some improvement in nearly all subtest areas (spelling was the exception) as measured by T-tests. Although increases varied among program and sub test area, it appears that the interventions had the desired affect. The outcomes were measured by analyzing the pre and post WRAT 4 Standard scores in 5 subtest areas. Standard scores were chosen because they indicate how far below or above the average mean a student’s score falls. Many researchers report results using the standard score for psycho-educational, intelligence and academic testing familiar to both public child welfare and public education. Standard scores are common where the Bell Curve represents where a score falls on a continuum, with the mean score representing the average.

It should be noted that the one area tested by the WRAT 4 with little or no increase in score, was Spelling. The exception to this was when the data was analyzed with students in Special Education removed. At this level of analysis, Spelling scores showed statistically significantly increases for students in the Tutor Connection Program. However, the intent of this study was to examine the effect of the three tutoring models on all students receiving services. Thus, this factor was not investigated further. Although some students made minor improvements, when these scores were aggregated, it was not a discernable difference. Based on this, the analysis focused on areas where a marked increase in post-test scores was noted. These areas were Reading, Sentence Completion, Arithmetic and Reading Composite scores.
Additionally, Arithmetic scores saw marginal improvements. It is difficult to know what remediation area the tutors focused on with students, thus, it is possible that the Language Arts increases are due to the focus spent on those skills sets in tutoring sessions. This implication will be discussed in further detail later in this chapter.

Participants in the Tutor Connection Program showed a statistically significant increase in the largest number of subtest areas on initial analysis. The post WRAT 4 scores were statistically significant at the p<.001 (p=.000) level in Standard Reading and Standard Reading Composite. A statistically significant increase at the p<.05 level was found in Standard Sentence Completion (p=.020), and Standard Spelling scores (p=.028). Participants in NCLB Title I tutoring model showed a statistically significant increase at the p<.05 level for Standard Sentence Completion (p=.028), and Standard Reading Composite. (p=.010). Participants in the Success Inc. tutoring model showed no statistically significant increases in any subtest area. In order to determine if eligibility in Special Education impacted outcomes for these cohorts, identical analyses were run with those students records omitted. Although the level of statistical significance decreased (p<.001 to p<.01 and p<.01 to p<.05), gains in these areas persisted. While it is important to show statistical significant of improvement, it is also important to note that in the lives of these students, any increase in academic achievement is significant. In addition, although it appears that Tutor Connection made a far broader impact, further analysis does not necessarily support this conclusion.
In order to address the second research question, One-Way ANOVAs were conducted. In this analysis, the outcomes on the WRAT 4 post test were compared between and among the three programs. The findings of the Bonferroni Multiple Comparisons found that the mean difference of WRAT 4 Score increases were only statistically significant for those participants in Tutor Connection and only in Standard Reading scores. In all other sub test areas and for all cohorts, statistically significant mean increases were not found. Again, it is important to point out that the small sample size of the Success Inc. cohort may be impacting the findings. In spite of this consideration and those mentioned previously, it does appear that The Tutor Connection Program had the largest impact in the score difference percentages than the other two programs. Certainly, this finding warrants further investigation.

Significance of the Study

The findings of this research study are significant for several reasons. Primarily, this study showed that tutoring support can increase academic achievement for students in foster care. This is a population of students often viewed as un-teachable, yet this study showed that the majority of these students made some academic progress in 12 weeks. Even in the areas where the change difference was not statistically significant, the increased scores showed a trend in a positive direction. This can be a tremendous motivator to a reluctant learner or one who has experienced frustration in typical learning environments. Further, this finding (as it applies to students identified for Special Education services), could inform the Individual Education Program (IEP) process.
This study found that of the three tutoring models, The Tutor Connection Program in the Standard Reading score, made a statistically significant impact on program participants. In an era of standardized testing and strict mandates to increase proficiency in literacy and mathematics, this is a significant finding. The Tutor Connection Program utilized a para professional model that relies on the relationship between tutor and student, and the enthusiasm of the pre-teacher volunteers. It is a low cost, efficient model and is worthy of further study. In comparison, both NCLB Title I tutoring and Success Inc. have an hourly cost associated with the tutoring services students receive. This study found that interventions which use volunteers or Community Service Learning students hold promise.

Implications for Practice

In 57 of California’s 58 counties, there are county-wide Foster Youth Services programs that are mandated to provide direct services for students in foster care. There is a clear directive from state and federal legislation that tutoring services should be offered to students in foster care and other underachieving sub populations. In light of the findings of this study, several factors may need to be taken into consideration.

First, home-based tutoring programs appear to be more successful than site-based programs in attracting participants and retaining them through a program cycle. It is commonly known in child welfare that transportation is a barrier to service delivery. San Diego County does not have an extensive, or reliable public transportation system often found in large urban cities. The fact that the two home
based programs had a higher number of participants persist from pre to post testing and increased academic outcomes (on the WRAT 4) in more subject areas is significant. It would be fiscally responsible to create programs where tutors provide services to students in foster care in their homes rather than expecting them to travel to a tutoring center.

A second consideration would be to look at the impact of the tutoring programs on children of color. The issue of disproportionality is pervasive in the foster care system. It also is one focus of NCLB. This study points to effective home-based, one-on-one tutoring models that impact a student’s academic performance, as measured in pre and post testing. A large majority of the students with positive outcomes are students of color. These programs should be examined more closely to determine which characteristics are leading to increased student achievement.

Third, this study found that The Tutor Connection Program was the only intervention to make a statistically significant impact in the score difference in the area of reading. Since this program is administrated by SDCOE, FYS and FYS programs exist in 57 California Counties and 6 school districts, there is good reason to suggest the replication of this program in partnership with colleges of education across the state. This low cost intervention might be expanded to educate future teachers and serve more students in foster care.

Finally, this study disproved the null hypothesis that stated that tutoring will not lead to improved academic achievement for foster students. This is perhaps the
most significant finding. Indeed in all programs, across all areas of teaching, the majority of participants improved their sub test scores. Percentages varied from 45.4% of participants improving their scores by two or more points in Arithmetic when they received services from the NCLB Title I program, to 68.6% of participants improving their scores in Reading in the Tutor Connection Program. Whether these findings were statistically significant or not, they clearly are significant in the life of a reluctant learner.

In spite of frequent moves, the impact of trauma and deficits in academic ability, one-on-one tutoring helped these three cohorts of students in foster care improve their academic achievement. Although this finding cannot be generalized to the larger population of students in foster care, it is an important finding, none-the-less. This speaks to the resilience of these young people, their innate ability, and the need to set high expectations for them. We must look past their present academic functioning and see their potential. Only then will we be able to help all students in foster care succeed. Child welfare, public education, and advocates alike, should work together to provide more tutoring programs to help these student achieve.

Implications for Policy

In 2006, the California Legislature expanded the mandates for Countywide FYS programs by modifying Education Code 42921 (EC 42921). This change increased the funding available to FYS programs and mandated that direct services be provided to all youth in foster care with one startling exception. Unfortunately, the one
group of students in foster care that are omitted are those residing with relatives. Prior to July of 2006, FYS programs only served those foster youth in Licensed Children’s Institutions. The expansion of EC 42921 broadened the reach of these programs and enabled more children and youth to have necessary tutoring, mentoring, counseling, transition and emancipation services. While all of these services are meant to remediate the deficiencies that are prevalent in this population of students, there is no evidence that foster youth living with relatives, but under the jurisdiction of juvenile court, are more successful academically than those placed in foster homes. Thus, funding should be provided to serve these vulnerable children as well. If children placed with relatives are more stable, as the research suggests, than it seems likely they would benefit greatly from one-on-one tutoring provided by FYS programs. Similarly, research suggests that they may require this intervention for shorter periods of time, thereby producing a cost savings to the State in the long run.

The public child welfare and the education systems both lauded the increased attention and funding focused on educational attainment for students in foster care. As noted earlier, there is very little investigation into what types of tutoring programs produce increased educational outcomes for foster children. Therefore, one of the strongest implications for the policy makers in both child welfare and education is the need for research into the interventions which increase academic achievement of students in foster care. Indeed funding for longitudinal studies on the impact and value of tutoring programs seems an appropriate recommendation.
In California, AB 2463, the Postsecondary education: outreach and assistance for emancipated foster youth: California State University: California Community Colleges Act was passed in 1996. This legislation requires Community Colleges and the California State University system to engage in recruitment and retention activities for alumni of foster care. The legislation provides opportunities for colleges and universities to engage in creative partnerships such as The Tutor Connection Program. The replication of this promising program could be instrumental in providing both a low cost tutoring service to foster youth, and a vehicle for educating future teachers on this student population’s unique educational needs.

Finally, Title I funds are available to provide Supplemental Educational Services to foster youth residing in group homes or Foster Family Agency (or therapeutic) foster homes. As this study shows, many children in foster care have academic needs that are not being met during the course of their school day. Funding for services should be extended to all students in foster care. This would address two issues; first, the student’s need for remedial services; and second, public education’s challenge of providing for the complex and often extraordinary needs of foster youth. This would go a long way in challenging the resistance that advocates, foster parents, and students often encounter in the public schools.

Limitations/Delimiters

As in all research, there are limitations to this quantitative research design. First is the inability to control for external factors that influence the outcomes of the
study. In all but true experimental designs, the environment plays a tremendous role in every human subject’s life. Such is the case here. As mentioned previously, San Diego County experienced a tremendous and sustained wild fire in October 2007. The fire occurred in the middle of the study period, and affected virtually every school and student in the county. It is not possible to measure the impact of lost classroom or tutoring time lost during the mandatory evacuation period. Indeed, we can never truly know, or measure, the impact of the entire experience on the education of a traumatized child.

The second limitation is due to the small sample size. Due to time and budgetary constraints, the intent was to have three cohorts of 50 students in foster care. The actual cohorts in each model were smaller, consisting of 35, 44, and 9 students, respectively. One of the study criteria was that all participants receive tutoring for a period of 12 weeks between pre and post testing. Smaller cohort sizes impacted the statistical significance of the results. Thus, there could not be random samples drawn from the larger tutoring program participants. As a result, all program participants in each model who completed a pre- and post-test were entered into the study.

The focus of this study was on evaluating the impact of three distinct tutoring models. This study did not intend to consider the vast array of available tutoring options; thus, the findings are not inclusive of all potential successful interventions for students in foster care. Additionally, this study could not impose a standard secondary assessment tool to be administered to all three cohorts of foster youth. Although the
WRAT 4 was administered to all students in the three cohorts, these findings would be enhanced by the additional data derived from a second assessment tool. Finally, external life factors that impact foster youth are often extraordinary, and often cannot be measured, as was the case here. Similar to any research that involves human subjects outside of a laboratory setting, some factors cannot be controlled for.

A delimiter of this study was the difficulty in generalizing the findings to the broader population due to the focus on small groups of students in foster care participating in the study. While it may be possible to hypothesize that the findings will be meaningful to foster youth in general, further study would be required to confirm the validity of the findings.

Recommendations for Further Study

There are a variety of research areas that warrant further investigation. First, is a pursuit to answer the question: What is the impact of matching tutors and students based on ethnicity? It would be important to determine if an ethnic match produced larger academic increases than when a tutor and student are from different ethnic backgrounds. This would be especially meaningful to understand the needs of the large proportion of children of color in the foster care system. Often, these children lose touch with their ethnicity, and thus, their culture, in the course of entering the foster care system. It would be important to know if a connection to a tutor who represents their ethnic group would make more of an impact than one from a different ethnicity.
The second area for future study would involve a close analysis of the reason for referral to the tutoring programs and level of alignment between reason for referral and focus of the tutoring sessions. Many students are referred with one or more identified need, such as remediation in algebra or spelling. A thorough analysis of the relationship between reason for referral and actual subject areas which were the focus of the tutoring sessions might reveal important information. If in fact, the tutoring sessions were focused on other academic areas, or more heavily focused on one specific area, this might impact the outcomes of the pre and post testing. Additional focus on the pre and post test scores based on the areas of identified need and focus of the tutoring sessions would help to tease out the impact of the intervention based on these specific factors.

Third, a comparison of pre and post-test data with a standardized measure such as the data from the statewide standardized testing, which is mandated under No Child Left Behind, would provide significant insight into the tutoring program’s intervention. This analysis would confirm if the increased achievement found on the WRAT 4 testing carried over into increased achievement as measured by the public education system. This research could also include an examination of student’s grade reports as well.

Last, it is important to know if the increases shown in this study are sustainable over time. Thus, a longitudinal study that follows participants for an extended period of time, and monitors their academic progress on a variety of measures, at a number of
points in time, would be a major step towards increasing our understanding of evidence/research based tutoring interventions.

Conclusion

In conclusion, this study set out to determine if any one of three tutoring models under study made a significant impact on the achievement of students in foster care. In addition, this study sought to determine which of these made the greatest impact. The intent of this study was to produce findings that could inform the multitude of systems that interact with, and are responsible for the education of students in foster care. Although the findings suggest that only The Tutor Connection Program made a statistically significant impact in Reading, the findings also showed that all of the programs had some positive impact on the majority of the participants. The Tutor Connection program is a win-win for all entities involved in this population’s education. Indeed, social workers, judges, advocates, foster parents, group home providers schools, school leaders and students all stand to gain from this innovative program. In addition, this study found that all of the tutoring interventions under study, made some impact on the academic functioning of the student participants.

Countless professionals in California, and elsewhere, are focused on improving academic outcomes for students in children care. The legislature, child welfare, public education, county-wide and district Foster Youth Services Programs, as well as the advocacy community, are searching for effective and efficient interventions. The
findings reported here, and the one’s that will follow, can provide the necessary tools that provide hope for a bright, successful future for all children, but especially for youth who grow up in the foster care system.
## APPENDIX

### Table I

**Paired Sample test by Ethnicity-African American**

<table>
<thead>
<tr>
<th>African American</th>
<th>Sub Test</th>
<th>Model</th>
<th>t</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre/Post Reading</td>
<td>Tutor Connection</td>
<td>-2.905</td>
<td>7</td>
<td>.023*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCLB Title I</td>
<td>-3.246</td>
<td>19</td>
<td>.004**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-2.098</td>
<td>7</td>
<td>.074</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Sentence</td>
<td>Tutor Connection</td>
<td>-2.084</td>
<td>7</td>
<td>.076</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCLB Title I</td>
<td>-1.624</td>
<td>19</td>
<td>.121</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-1.317</td>
<td>7</td>
<td>.229</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Spelling</td>
<td>Tutor Connection</td>
<td>-2.582</td>
<td>7</td>
<td>.036*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCLB Title I</td>
<td>-1.548</td>
<td>19</td>
<td>.138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-0.630</td>
<td>7</td>
<td>.002**</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Arithmetic</td>
<td>Tutor Connection</td>
<td>.963</td>
<td>7</td>
<td>.367</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCLB Title I</td>
<td>.350</td>
<td>19</td>
<td>.730</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-.604</td>
<td>7</td>
<td>.565</td>
</tr>
<tr>
<td></td>
<td>Reading Composite</td>
<td>Tutor Connection</td>
<td>-3.005</td>
<td>7</td>
<td>.020*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NCLB Title I</td>
<td>-3.912</td>
<td>19</td>
<td>.001**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-1.825</td>
<td>7</td>
<td>.111**</td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
Table II

Paired Sample test by Ethnicity-Latino

<table>
<thead>
<tr>
<th>Latino</th>
<th>Sub Test</th>
<th>Model</th>
<th>T</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre/Post</td>
<td>Reading</td>
<td>Tutor Connection</td>
<td>-2.614</td>
<td>13</td>
<td>.021*</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-.599</td>
<td>10</td>
<td>.563</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Sentence</td>
<td>Tutor Connection</td>
<td>-1.387</td>
<td>13</td>
<td>.189</td>
</tr>
<tr>
<td>Completion</td>
<td>NCLB Title I</td>
<td>.525</td>
<td>10</td>
<td>.611</td>
<td></td>
</tr>
<tr>
<td>Standard Score</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Spelling</td>
<td>Tutor Connection</td>
<td>-1.599</td>
<td>13</td>
<td>.134</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-.258</td>
<td>10</td>
<td>.802</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Arithmetic</td>
<td>Tutor Connection</td>
<td>-3.950</td>
<td>13</td>
<td>.002**</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>.754</td>
<td>10</td>
<td>.468</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>Composite</td>
<td>Tutor Connection</td>
<td>-2.265</td>
<td>13</td>
<td>.041*</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>.112</td>
<td>10</td>
<td>.913</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
Table III

Paired Sample test by Ethnicity-White

<table>
<thead>
<tr>
<th>White</th>
<th>Sub Test</th>
<th>Model</th>
<th>T</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre/Post</td>
<td>Tutor Connection</td>
<td>-1.106</td>
<td>10</td>
<td>.295</td>
</tr>
<tr>
<td></td>
<td>Reading</td>
<td>NCLB Title I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre/Post</td>
<td>Tutor Connection</td>
<td>-2.115</td>
<td>10</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>Sentence</td>
<td>NCLB Title I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completion</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre/Post</td>
<td>Tutor Connection</td>
<td>-1.084</td>
<td>10</td>
<td>.304</td>
</tr>
<tr>
<td></td>
<td>Spelling</td>
<td>NCLB Title I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre/Post</td>
<td>Tutor Connection</td>
<td>-1.118</td>
<td>10</td>
<td>.290</td>
</tr>
<tr>
<td></td>
<td>Arithmetic</td>
<td>NCLB Title I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reading</td>
<td>Tutor Connection</td>
<td>-2.112</td>
<td>10</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>Composite</td>
<td>NCLB Title I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>Success Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
Table IV

Paired Sample test by Grade Level: 1-5

<table>
<thead>
<tr>
<th>Grades 1-5</th>
<th>Sub Test</th>
<th>Model</th>
<th>T</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre/Post Reading</td>
<td>Tutor Connection</td>
<td>-1.736</td>
<td>10</td>
<td>.113</td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-.745</td>
<td>11</td>
<td>.472</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-.610</td>
<td>2</td>
<td>.604</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Sentence</td>
<td>Tutor Connection</td>
<td>-.508</td>
<td>10</td>
<td>.623</td>
</tr>
<tr>
<td></td>
<td>Completion</td>
<td>NCLB Title I</td>
<td>-2.360</td>
<td>11</td>
<td>.038*</td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>Success Inc.</td>
<td>-1.463</td>
<td>2</td>
<td>.281</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Spelling</td>
<td>Tutor Connection</td>
<td>-1.674</td>
<td>10</td>
<td>.125</td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-.610</td>
<td>11</td>
<td>.554</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-3.000</td>
<td>2</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Arithmetic</td>
<td>Tutor Connection</td>
<td>-2.228</td>
<td>10</td>
<td>.050</td>
</tr>
<tr>
<td></td>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-.717</td>
<td>11</td>
<td>.488</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-1.453</td>
<td>2</td>
<td>.284</td>
</tr>
<tr>
<td>Reading</td>
<td>Composite</td>
<td>Tutor Connection</td>
<td>-1.347</td>
<td>10</td>
<td>.208</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>-2.519</td>
<td>11</td>
<td>.029*</td>
</tr>
<tr>
<td>Difference</td>
<td>Success Inc.</td>
<td></td>
<td>-1.287</td>
<td>2</td>
<td>.327</td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
Table V

Paired Sample test by Grade Level: 6-8

<table>
<thead>
<tr>
<th>Grades 6-8</th>
<th>Sub Test</th>
<th>Model</th>
<th>T</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre/Post Reading</td>
<td>Tutor Connection</td>
<td>-2.889</td>
<td>13</td>
<td>.013*</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>.551</td>
<td>20</td>
<td></td>
<td>.587</td>
</tr>
<tr>
<td></td>
<td>Tutor Connection</td>
<td>-.818</td>
<td>1</td>
<td></td>
<td>.563</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Sentence</td>
<td>Tutor Connection</td>
<td>-2.766</td>
<td>13</td>
<td>.016*</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-1.462</td>
<td>20</td>
<td></td>
<td>.159</td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td>-3.400</td>
<td>1</td>
<td></td>
<td>.182</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Spelling</td>
<td>Tutor Connection</td>
<td>-.842</td>
<td>13</td>
<td>.415</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>.019</td>
<td>20</td>
<td></td>
<td>.985</td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td>---</td>
<td>--</td>
<td></td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Pre/Post Arithmetic</td>
<td>Tutor Connection</td>
<td>-.913</td>
<td>13</td>
<td>.278</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>.762</td>
<td>20</td>
<td></td>
<td>.455</td>
</tr>
<tr>
<td></td>
<td>Success Inc.</td>
<td>-1.444</td>
<td>1</td>
<td></td>
<td>.386</td>
</tr>
<tr>
<td></td>
<td>Reading Composite</td>
<td>Tutor Connection</td>
<td>-3.238</td>
<td>13</td>
<td>.006**</td>
</tr>
<tr>
<td>Standard Score</td>
<td>NCLB Title I</td>
<td>-1.030</td>
<td>20</td>
<td></td>
<td>.315</td>
</tr>
<tr>
<td></td>
<td>Difference</td>
<td>Success Inc.</td>
<td>-1.667</td>
<td>1</td>
<td>.344</td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
Table VI

Paired Sample test by Grade Level: 9-12

<table>
<thead>
<tr>
<th>Grades 9-12</th>
<th>Sub Test</th>
<th>Model</th>
<th>T</th>
<th>df</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre/Post</td>
<td>Reading</td>
<td>Tutor Connection</td>
<td>-2.457</td>
<td>9</td>
<td>.036*</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>-2.538</td>
<td>10</td>
<td>.029*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-1.956</td>
<td>3</td>
<td>.145</td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Sentence Completion</td>
<td>Tutor Connection</td>
<td>-0.665</td>
<td>9</td>
<td>.522</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>-0.444</td>
<td>10</td>
<td>.666</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-0.292</td>
<td>3</td>
<td>.789</td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Spelling</td>
<td>Tutor Connection</td>
<td>-1.532</td>
<td>9</td>
<td>.160</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>-1.073</td>
<td>10</td>
<td>.309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>-2.840</td>
<td>3</td>
<td>.066</td>
</tr>
<tr>
<td>Pre/Post</td>
<td>Arithmetic</td>
<td>Tutor Connection</td>
<td>-0.046</td>
<td>9</td>
<td>.965</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>0.548</td>
<td>10</td>
<td>.596</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Success Inc.</td>
<td>0.586</td>
<td>3</td>
<td>.593</td>
</tr>
<tr>
<td>Reading</td>
<td>Composite</td>
<td>Tutor Connection</td>
<td>-2.268</td>
<td>9</td>
<td>.050</td>
</tr>
<tr>
<td>Standard</td>
<td>Score</td>
<td>NCLB Title I</td>
<td>-1.753</td>
<td>10</td>
<td>.110</td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td>Success Inc.</td>
<td>-0.866</td>
<td>3</td>
<td>.450</td>
</tr>
</tbody>
</table>

* p<.05, **p<.01
References


101


California Department of Education. Available online at http://www.cde.ca.gov/ls/pf/fy/execsummary.asp

California Department of Education. Available online at http://www.cde.ca.gov/ta/ac/ti/documents/regsfromoal.doc


National Child Care Information Center (2002). Available online at http://www.nccic.org/statedata/statepro/display.cfm?state=California#demographic


