Promoting Educational Well-Being for Foster Care Youth in Lucas County, Ohio: Exploring the Impact of Race, Age, and Service Provision on the Development of Human Capital

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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Abstract

Recent studies have described the poor educational outcomes of many youth who emancipate from foster care. Many of these youth leave foster care without the ability to function as healthy, self-sufficient adults and are as a result at great risk of unemployment, poverty, incarceration, homelessness, and other negative adult outcomes. Prior research has described various challengers that can leave the foster care population more academically vulnerable than other disadvantaged populations. This study utilized child-level secondary data to quantitatively relate race/ethnicity, age, mental health, and reason for foster care entry to service provision and educational performance for 243 foster care children aged 5 to 18 in Lucas County, Ohio. Descriptive findings were consistent with prior research indicating that children in foster care face high rates of mental health disorders, school instability, and placement in special education. African American and older children are particularly vulnerable to harmful systemic impacts on their educational progress. Chi square and logistic regression analyses suggest that children of different ages, races, mental health status, and maltreatment histories face differing challenges to educational success after entering the foster care system. Challenges may become particularly evident in early adolescent children. If not identified and addressed, these challenges may threaten the educational well-being, and therefore the future self-sufficiency of the most vulnerable children for years to come. Implications point to the need for the child welfare system to proactively provide stage-
salient and culturally competent educational and social-emotional supports to children in foster care, beginning early in life and throughout the foster care continuum. A process of data collection and sharing of educational information between the child welfare and educational systems is needed to inform effective and targeted efforts leading to meaningful fulfillment of the federal mandate to provide educational well-being for children in foster care.
Dedication

Dedicated to my parents

And to my childhood friend, Diane (1956 - 1974)
Acknowledgments

I would like to acknowledge the patience and support of my husband, without whom this research would not have been possible. I am grateful to my parents for instilling in me a desire to work hard and never stop learning. I would also like to acknowledge the wonderful help and support of my Advisor, Dr. Denise Bronson for renewing my strength and commitment each time we talked. I am forever grateful to Dr. Bronson and the rest of my dissertation committee, Dr. James Altschuld, Dr. Tamara Davis, and Dr. Alvin Mares. I sincerely believe I had the best committee there could ever be. The experience, direction, and insight they provided were invaluable to this research. I am very grateful for all of my friends who supported me, especially those associated with Ohio State College of Social Work, past and present, who got me over the “humps” by saying, “You can do it, Diana!.. You’re almost there!” when that was just what I needed to hear. I am also grateful and appreciative to Dean Sparks, Executive Director of Lucas County Children Services for his trust in allowing me to access the agency’s data for this study, and for the commitment he, the staff of LCCS, and its Board of Directors have to reduce and eliminate barriers to educational success for children in foster care so that they can realize opportunities for happy, productive lives.
Thank you to Rob Claypool, Data Analyst for Lucas County Children Services for his patient assistance in obtaining the data for me. Finally, I wish to acknowledge the foster children whom I was fortunate enough to get to know face-to-face as well as those I have never met except through their case records. They showed me the limitless potential and aspiration to grow and succeed that exists in all children.
DISCLAIMER

This study utilized secondary data from Lucas County Children Services, a Public
Children Services Agency in Toledo, Ohio. Nothing in this research should be construed
to imply the endorsement of Lucas County Children Services, its administration or its
staff in any way.
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Publications


Fields of Study

Major Field: Social Work
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Chapter 1: Introduction

Children in foster care are an academically vulnerable population (McMillen, Auslander, Elze, White, & Thompson, 2003; Ayasse, 1995; Blome, 1997). Foster children are more likely to repeat a grade, to be suspended or expelled, to perform poorly on standardized tests, and to be placed in special education than non-foster children (Pecora, et. al., 2005). As adults, youth who emancipated from foster care are less likely to graduate from high school, and more likely to be unemployed, homeless, and in poverty, than other young adults (Blome,1997; Casey Family Programs, 2004).

African American families and children are involved with child welfare at a rate disproportionate to their representation in the population (Casey, 2004). Although only 12.9% of the United States population was identified as Black or African American in the most recent census, government child welfare databases reveal that in 2006, 32% of children in foster care were Black/Non-Hispanic versus 40% who were White/Non-Hispanic, although Whites made up 77.1% of the population (United States Census Bureau, 2009). The over-representation of African American families involved with the child welfare system places these children at disproportionate risk to join that most vulnerable of young adult populations.

Maltreatment has been associated with cognitive, emotional, and behavioral effects that can make learning difficult (Eckenrode, Laird & Doris, 1993). Placement in
foster care removes children from unsafe situations, however, researchers also cite factors associated with the foster care system itself as adding academic barriers to the children in its care (Smithgall, Gladden, Howard, George, & Courtney, 2004). Among the systemic barriers associated with placement in foster care is a failure to assess children’s educational needs and provide sufficient academic supports. In too many cases, advocates say, there is insufficient monitoring of foster children’s educational needs by caseworkers and others responsible for the children’s care (Blome, 1997). Children experience frequent placement moves resulting in multiple school changes (Blome, 1997; Eckenrode, Rowe, Laird, & Brathwaite, 1995). For children whose healthy development has already been compromised by abuse or neglect and the trauma of removal from the familiar environment of their homes, the presence or absence of stability and academic support while in foster care may determine whether they regain lost ground or fall further behind in school. Therefore, the experiences children have while in foster care can either further educational well-being or make academic success more difficult to achieve.

One way to view the positive and negative influences that promote or impede healthy functioning conducive to academic success for foster children is through the lens of ecological-transactional theory. Ecological-transactional theory explains the degree of healthy or maladaptive functioning as the balance between challengers, called potentiating factors, and protective factors, called compensatory factors to which an individual is exposed through his or her societal, community, and family environments (Ciccetti & Toth, 1995). The experiences of children who enter foster care are likely to include significant potentiating factors that affect their school performance. Most have
histories of maltreatment resulting in varying degrees of trauma. Their biological family environments may have been characterized by violence, chaos, poverty, substance abuse, and unpredictability (Desbiens & Gagne’, 2007). Many begin life biologically vulnerable to the effects of adverse environments due to in utero exposure to drugs or alcohol (Karr-Morse & Wiley, 1997) then are deprived of the types of adult interaction, nurturance, and attention to their needs that foster trust and attachment (Toth & Ciccetti, 1996).

Placement in foster care is an intervention that removes children from harmful environments. Many children in foster care move frequently from placement to placement, and often change schools due to the moves (Aron & Zweig, 2003). This lack of stability makes it difficult for children to learn because they must continually adjust to new caretakers, different schools, peers, and curriculums (Aron & Zweig, 2003). Thus, placement instability becomes a potentiating factor for many children in foster care. On the positive side, children in foster care can receive services such as tutoring or mentoring that may ameliorate or buffer the impact of maltreatment histories on their educational functioning. Such services could act as compensatory factors. This study applies the concepts of potentiating factors and compensatory factors to children’s salient characteristics and foster care experiences. Variables explored are prominent in the literature as creating or reducing barriers to academic success for foster care children.

This research is needed because the educational challenges faced by foster children are unique and complex, and thus far have not been adequately addressed by the child welfare system (Blome, 1997; Zetlin, Weinberg & Kimm, 2003). Low educational attainment of children who emancipate from foster care has been linked with problems in
adulthood such as unemployment, incarceration, and welfare dependence that are costly to the individuals involved as well as to society (Ayasse, 1995). The issue has been identified by policy-makers as a significant social problem as well as a moral responsibility of the system acting as “parent” to these youth (California Department of Education, 2008).

Recent child welfare research links educational success with the economic concept of human capital, in that it increases the likelihood of positive functioning and reduces the need for costly social services later in life (Kilburn & Karoly, 2008). Human capital is usually described as qualities of physical health, emotional health, and educational attainment that predict future earnings and productivity. Because of difficulties in quantifying the broad concept, educational attainment is a recognized proxy for human capital (Wulczyn, 2008). Human capital theory is particularly appropriate to the study of foster children because it places significance on positive or adverse experiences and the developmental stages in which they occur (Wulczyn, 2008; Heckman, 2001) and links those experiences to later stability and positive functioning. While children are in foster care countless decisions are made about how to invest increasingly scarce resources to best meet immediate and future needs. In this study, the concepts of ecological-transactional and human capital theories are utilized to explore the relationships between potentiating factors, compensatory factors, and educational human capital of children in foster care in Lucas County, Ohio.

The study quantitatively describes and explores secondary data collected by Lucas County Children Services (LCCS), an urban Ohio public child protective services agency
(PCSA). LCCS data was chosen because the agency has had an initiative since 2004 which has as its goal the improvement of educational outcomes for its foster children. Because it has such a program, LCCS has amassed internal data about educational service provision and educational performance of foster children that similar PCSA’s in Ohio do not have. The goals, objectives, and strategies of the LCCS Education Initiative are consistent with those currently recommended by current researchers and advocacy groups as ways to help foster children succeed in school. The availability of child-level data describing educational service provision and academic performance as well as administrative data with salient characteristics, histories, and experiences of a sample of foster children in care for a full academic year provides a unique opportunity to enhance existing knowledge of this critical and timely issue. Although findings of this convenience sample cannot be generalized beyond the LCCS population, the study helps to inform decisions about future resource utilization, casework practice, and child welfare policy to move toward the enhancement of educational well-being and human capital of children in foster care.

1.1 Historical Function of the Child Protection System

Child protection is a relatively young system, having begun with The New York Society for the Prevention of Cruelty to Children in 1874. The Society was a response to public outrage and a social worker’s efforts after a young girl, Mary Ellen Wilson, was found beaten and starved by her caregiver and it was determined that no laws or systems were in place to ensure the child’s protection (American Humane, 2009). Prior to that time, the child welfare response consisted “friendly visitors”, almshouses
and orphan trains. The sad case of Mary Ellen laid the foundation for the child protection system in its current form - as a responsibility and function of government (Schene, 1998). It is now a component of the broader child welfare system, but its role and accountabilities are constantly evolving.

The federal government played no significant role in funding child welfare services until passage of the Social Security Act of 1935. Incorporated in the Act was The Child Welfare Services Program, also known as Title IV (Courtney, 1998). Federal funding for foster homes through Title IV began in 1961 (Courtney, 1998). Later legislation split the federal funding stream into Title IV-B, which is to be used to serve children in their own homes to reduce maltreatment and prevent placement in foster care, and Title IV-E, which reimburses states for costs related to foster care (Wulczyn & Oberleke, 2005).

Since its inception, the CPS system has been functioning with the sometimes conflicting goals of removing children from abusive homes and helping parents to foster environments conducive to child safety and well-being (Karski, 1999). The goal of the CPS system is to work with families to keep children safe in their own homes whenever possible, however the majority of funding is derived through Title IV-E, which supports foster placement (Wulczyn & Oberleke, 2005). CPS resources are limited, so when the two goals conflict, ensuring child safety becomes paramount.

1.2 Prevalence of Child Maltreatment

Many children who are abused or neglected never come to the attention of the child welfare system, but CPS agencies are required to investigate all reports that meet
the statutory threshold of abuse or neglect in their respective states. According to the Children’s Bureau, a division of the U.S. Department of Health and Human Services, CPS agencies in the United States investigated approximately 1.9 million allegations of abuse and neglect, involving nearly 3.6 million children in 2006, the most recent year with available data. The investigations found that at an estimated 905,000 children had been victims of abuse or neglect (DHHS, 2009).

1.3 Foster Care

The majority of children who are victims of abuse and neglect will not enter foster care, which is the most intrusive of CPS interventions (English, 1998). Children enter foster care because a court has deemed that they cannot safely remain in their own homes due to abuse, neglect or dependency. Most children who are in public foster care have been victims of maltreatment judged to be severe enough to warrant intrusive intervention into the family system. Some have multiple foster care episodes during their childhoods (Van Voorhis & Gilbert, 1998; Trickett & McBride-Chang, 1995). According to the Adoption and Foster Care Analysis Reporting System (AFCARS), there were 510,000 children with a median age of 10.2 years in foster care on September 30, 2006. More than one third of these children (34%) were five years old or younger (DHHS, 2009).

Federal law requires that CPS officials make reasonable efforts to maintain children safely in their own homes prior to any authorization by a court to place the child in substitute care although the law does allow for exceptions under limited circumstances (Van Voorhis & Gilbert, 1998). This is because removal from parents and familiar
surroundings is in itself a potentially traumatic and highly disruptive event for the children involved (English, 1998). Because it is a “last resort” measure, and because of its historical emphasis on protection and permanency, some argue that the well-being needs of children have been overlooked as the foster care system has evolved (Wulczyn, 2008). Federal and State mandates have increasingly directed child protection agencies to improve their assessment and monitoring of child well-being, including educational well-being, but have not specifically provided guidance as to how this might be accomplished (Wulczyn, 2008).

Foster care is by definition a lack of permanency and is meant to be a short-term living situation until children can be reunified with their families or adopted, but statistics provided by the Adoption and Foster Care Analysis and Reporting System (AFCARS) indicate that many children remain in foster care for extended periods of time. The mean length of time children had been in foster care in 2006 was 28.3 months. In fact, 24% of children had been in foster care more than three years (DHHS, 2009).

1.4 Educational Performance of Foster Children

Foster children, as a population, perform more poorly in school than non-foster children. A study of 239 third through eighth grade Chicago Public School students who entered care during 2002 and 2003 found that 37.2% had repeated a grade, as opposed to 21.5% of all youth in a national sample (Courtney, Roderick, Smithgall, Gladden & Nagaoka, 2004; Smithgall, et al., 2004). Almost 50% of Chicago children in out-of-home care who were in the third to eighth grade scored in the bottom quartile on the reading section of the Iowa Test of Basic Skills (Courtney, et al., 2004; Smithgall, Gladden, Yang
In middle childhood, physically abused, neglected and children with multiple maltreatment types have been found to have school problems including maladaptive behavior in the classroom, low grades, poor standardized test scores, and frequent grade retention, with younger children and neglected children most affected (Trickett & McBride-Chang, 1995).

Public school students in out-of-home care have been found to be almost twice as likely to be old for their grade by at least a year, after controlling for demographics and school attended (Courtney, et al., 2004; Smithgall, et al., 2004). Similarly, almost 45% of foster youth in a New York study reported being retained at least once in school (Advocates for Children of New York, 2000) and a 2001 study in Washington State observed that twice as many youth had repeated a grade as non-foster youth, at both the elementary and secondary levels (Burley & Halpern, 2001).

1.4.1 Educational Outcomes of Emancipating Foster Youth

Some youth remain in foster care until they turn 18 years old, at which time they emancipate, or “age out” of the child welfare system. The recent policy attention to the educational needs of foster children is likely driven by the body of research describing dismal outcomes of youth who have emancipated from foster care. According to a 1992 U.S. Department of Health and a Human Services (DHHS) study, of a total of 34,600 youths who had emancipated from foster care, two-thirds of the eighteen year olds in the study did not have a high school diploma or GED (Aaron & Zweig, 2003; Ayasse, 1995; Blome, 1997; Casey Family Programs, 2001).
The situation may have improved, but Casey Family Programs (2008) reported that foster youth still have far lower rates of high school graduation (as low as 40% according to some researchers) than non-foster peers. By comparison, the 2004 United States Census reported that 85.6% of the general population had graduated from high school (Casey, 2008). At a time when the job market is becoming increasingly competitive, young adults without a high school education have severely limited job prospects. Human capital theorists view failure to sufficiently invest in ensuring children’s education as a costly mistake because education is a critical component of human capital and thus provides a strength on which other strengths can build. Early investments in human capital, these theorists point out, involve less cost and are more likely to be effective than later investments (Wulczyn, 2008).

1.5 Long-term Societal Outcomes

Low educational attainment is associated with increased risk of homelessness, involvement with the criminal justice system, and other human and societal costs (Casey, 2001; Kurtz, Gaudin, Wodarski, & Howling, 2003; McMillen, et. al., 2003). The 1992 DHHS study of emancipated foster youth reported that two years after leaving foster care, only 38% of the young adults had stayed employed and only 48% had ever held a full-time job. Many of the former foster youth had problems with drug use (17%) and 17% of the young women were pregnant. A more recent study, The Casey Northwest Foster Care Alumni Study and Midwest Evaluation of the Adult Functioning of Former Foster Youth (2004), had similar findings. The study found that when compared to non-foster care alumni, former foster youth are more likely to be poor, have mental health problems,
abuse drugs, have criminal justice system involvement, and become parents while still in
their teens and/or while unmarried.

1.6 The Lucas County Educational Initiative

As mentioned previously, few county child protection agencies systematically
collect detailed data on the academic performance of children in foster care in a manner
that can be aggregated and analyzed (Legal Center for Foster Care and Education, 2009).
The LCCS Educational Initiative provides an exception. Lucas County Children
Services is a metropolitan county public child protection agency in northwest Ohio.
Lucas County encompasses the city of Toledo and surrounding areas.

1.6.1 Description

This PCSA began development on its Educational Initiative in 2004 as a program
designed to improve the educational outcomes of its children in foster care. School-aged
children who enter foster care are given a standardized educational assessment to
determine the level of academic support they need. Children who are known to be in
special education at the time they enter care are not assessed, because they already have
an Individualized Education Plan (IEP) through the school system. Children whose
educational assessments indicate a high or moderate level of academic need are assigned
to an Education Monitor (EM) and children in special education are assigned to an
Educational Services Specialist (ESS) for educational support. The EM and ESS work
with the child’s caseworker, foster parent and teachers to: a) ensure that the child is
referred to academic support services such as tutoring, mentoring, or other supports, b)
advocate with the school system for the child’s educational stability and appropriate
academic setting, and c) monitor the child’s progress by requesting grade cards and tracking grade performance.

1.7 Theoretical Foundations

The data available in Lucas County provides an opportunity to combine educational service and performance data with other administrative data to learn about the characteristics of foster children, correlates related to challenges and supports discussed and advocated in the literature, and differential benefits. The combined data allows potentiating and compensatory factors believed to influence educational well-being and implications for the development of human capital among this vulnerable population to be explored in a manner rarely seen in child welfare. This study explores the salient child characteristics of race and developmental stage, mobility, academic service provision, and the educational performance of children in foster care through the lens of ecological-transactional and human capital theoretical frameworks.

As illustrated in Table 1, the domains of environmental interest to Ecological-Transactional theorists are biological, historical, psychological, and sociological. Human Capital theorists are interested in educational, behavioral, and physical health as predictors of future social and economic well-being, which they call human capital (Wulczyn, 2008).
Table 1  Comparison of Theories

<table>
<thead>
<tr>
<th>Domains of Interest</th>
<th>Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human Capital</strong></td>
<td>Education, behavioral health, and physical health (human capital)</td>
</tr>
<tr>
<td><strong>Ecological-Transactional</strong></td>
<td>Biological, historical, psychological, and sociological environmental influences</td>
</tr>
</tbody>
</table>

The vast majority of children in foster care have histories of maltreatment. Many have been exposed to adverse prenatal conditions such as drug or alcohol exposure, maternal stress, and a lack of prenatal care that has been associated with later difficulties with regulation of emotions, attention problems, and developmental delays (Karr-Morse & Wiley, 1997; Perry, 2001). Childhood maltreatment can further compromise physical, behavioral and mental health (Egeland, Sroufe & Erickson, 1983; Yates, 2007), creating potentiating factors for optimal development. If maltreated children enter foster care, their experiences in the foster care environment can act as further potentiating factors (e.g. separation from caring adults, mobility in placement) or compensatory factors (e.g. stability, adult monitoring of educational progress and needs). Compensatory influences would be expected to mitigate the developmental impact of abuse and neglect, and furthering educational well-being, or human capital. Children who possess higher levels
of human capital would be expected to have more optimal short and long-term outcomes than children who have a deficit of human capital.

1.8 Dissertation Aims and Rationale

While in foster care children have great needs. The federal government, through The American Safe Families Act (AFSA) mandates that Public Child Protection Agencies are responsible to meet the safety, permanency, and well being needs of children with whom they are involved. Well-being needs, as defined by the federal government, include physical, social emotional, and educational needs (DHHS, 2009). Wulczyn (2008) equates well-being to human capital.

A tightening economy can lead to an increased impetus at the federal policy level to utilize scarce resources in a way that decreases the disparity in human capital between vulnerable populations and those with greater advantages. Educational achievement is integral to human capital (Heckman, 2001). This study adds to what is known about the human capital of children in foster care because it describes and explores an existing intervention and the differing educational needs of the children it reaches. Advocates for foster children and youth are increasingly calling for more to be done to help foster children succeed in school, but little empirical research to guide targeted interventions exists. Increased knowledge in this area is needed to help to build the foundation upon which such research can be built.
1.8.1 Research Questions

The study addresses the following major research questions:

(1) How many and what percentage of the children face potentiating factors to their educational well-being?

(2) Are children who need, receive, and benefit from services differentiated by age and/or race?

(3) Are there differences in potentiating or compensatory factors among children based on age and/or race?

(4) Are needs, services, and benefits predicted by potentiating or compensatory factors?

1.9 Implications for Social Work

This study provides insight and exploration into the academic needs, services, and performance of children in foster care in Lucas County, Ohio. The study identifies patterns of academic need and service provision for children in foster care with different racial backgrounds and ages. In addition, the study adds to the knowledge of systemic barriers that contribute to maintenance of the problem under study, and thereby has the potential to help LCCS and other child welfare agencies to better identify and meet the educational needs of foster children in tightening economic conditions. The implications are of particular relevance with regards to African-American children and older children in foster care. These two populations are at highest risk for the most serious long-term consequences of deficits in human capital; incarceration, poverty, and homelessness.
Chapter 2: Literature Review

2.1 Introduction

This study draws from previous research to relate ecological-transactional theory and human capital theory to child welfare investments in the educational well-being of foster children, and to the effectiveness of those investments. Ecological theorists are interested in how the effects of maltreatment interact with the ecological environment, which includes inter-personal relationships, broader community experiences, and societal influences, to produce differing effects on a child’s development. Ecological-transactional theory views challenging aspects within the ecological environment as potentiating influences that make healthy development more difficult. Positive aspects within the environment serve as protective buffers that bolster healthy developmental processes and compensate for challengers. These potentiating and compensatory factors are bi-directional, meaning characteristics of the children influence the environment, and vice versa.

Similarly, human capital theorists are interested in ways in which the type and timing of maltreatment impacts the accumulation of human capital among individuals. The concept of human capital is viewed as a composite of physical, social-emotional, and educational well-being. To human capital theorists, if early investments are made in the human capital of children, these children are more likely to possess a greater capacity to
contribute productively to society when they become adults. Human capital theorists place significance on early investments because of the “dynamic complementarity” of human capital development – strengths in domains of well-being are built upon existing strengths and weaknesses build on weaknesses. Later investments in human capital require greater investment and are less effective in producing change.

The existing literature suggests that maltreatment is harmful to children’s healthy physical, social-emotional and cognitive development. The risk of maltreatment, particularly neglect, increases when other challenges in the ecological environment, such as substance abuse, parental mental illness, violence, poverty, low educational levels, and lack of adequate community supports are present as well. These risk factors are also associated with academic difficulty for children exposed, whether or not maltreatment occurs. Racial minorities are more likely to be poor and to therefore to experience ecological risk factors associated with poverty at each level of the environment. As a result, children of color as a group are particularly vulnerable to risk of neglect. Neglect may be more harmful to development than other forms of maltreatment because of it tends to be chronic rather than isolated and sporadic in nature.

Due to the effects of maltreatment and other environmental risk factors, children often enter foster care already academically vulnerable and in need of educational support. The level of educational need children bring with them when they enter foster care differs because children differ in the quality of their prior environments, length of exposure to maltreatment and adversity, and individual characteristics. For some children, foster care will provide safety, stability, and supportive services that will grow
their human capital and these children may thrive. Others, however, may lose human capital ground because of exposure to additional potentiating factors related to their foster care experiences. For example, children with behavioral and mental health problems may be less stable in placement and remain in foster care longer. Efforts by the child welfare system to improve the educational performance of these children may be less effective within a cycle of instability characterized by frequently changing caregivers, school environments, and services disrupted because of moves. Children of color may have been exposed differently to potentiating factors in comparison to White children, and older children may have been exposed for longer periods of time than younger children. This study, therefore, explores the hypotheses that, a) educational need will differ based on race and age, b) potentiating factors will differ based on race and age, c) educational service provision will differ based on potentiating factors, and d) the compensatory effect of service provision on academic performance will differ based on potentiating factors present. This remainder of this Chapter summarizes the research upon which the study hypotheses are based.

Presented first are definitions of different types of maltreatment followed by a deeper explanation of the theoretical underpinnings of this research. Prior research is described to illustrate how histories of maltreatment can lead to a cycle of negative school experiences for maltreated children, and if they should enter foster care, how systemic problems within the child welfare system can further challenge (potentiate) or buffer (compensate) their academic progress. The disproportionate racial implications
and relevant public policy are discussed. This Chapter concludes with a description of 
the Lucas County Educational Initiative, its methods, objectives, and services.

2.2 Types of Child Maltreatment

In the United States, Federal and State laws define child abuse and neglect, thus 
delineating the parameters for local intervention on two levels. Federal law provides a 
framework in the form of minimum standards that must be incorporated into each States’ 
definitions (English, 1998). These minimum standards were first delineated in The Child 
Abuse Prevention and Treatment Act (CAPTA, P.L. 94-247, 1974). The Act, which has 
been reauthorized and amended several times, defines child abuse and neglect as:

Any recent act or failure to act on the part of a parent or caretaker, which 
results in death, serious physical or emotional harm, sexual abuse, or 
exploitation, or an act or failure to act which presents an imminent risk of 
serious harm (CAPTA, 1974).

Every State and the District of Columbia has laws defining child abuse and 
neglect. Although each is allowed some flexibility in its own statute, definitions 
instituted by States cannot be inconsistent with CAPTA, which supersedes State law. 
These statutory definitions are applied to laws governing the reporting and investigation 
of allegations of physical, sexual, and emotional abuse and neglect (English, 1998).
Neglect is the most frequently identified form of maltreatment (DHHS, 2009; English, 1998; Turney & Tanner, 2001). The Children’s Bureau, located within the Administration on Children, Youth, and Families reported that in 2006, 64.1% of child maltreatment victims had been neglected, 16% were physically abused, 8.8% were sexually abused, and 6.6% were psychologically abused. Maltreatment types that do not fit into one of the above categories may be categorized as “other”. In 2006, 15.1% of findings involved “other” maltreatment. States have the option of coding any maltreatment type that does not fit into one of the main maltreatment categories as “other”. Maltreatment types in the “other” category could include “congenital substance abuse addiction”, “abandonment”, or “threats of harm to the child” (Child Welfare Information Gateway, 2008). Children can be the victims of more than one maltreatment type, explaining the reason that the above percentages do not add up to 100%. Of children maltreated, nearly one quarter (25.3%) had prior histories of victimization with CPS (Child Welfare Information Gateway, 2008).

2.2.1 Physical Abuse

A general definition of physical abuse is, “any non-accidental physical injury to a child.” Actions that could constitute physical abuse include, striking, kicking, burning, or biting a child (English, 1998). An action that causes physical impairment to a child would be classified as physical abuse. As of April 2007, thirty-six states, including Ohio, as well as several territories expand the definition of physical abuse to include any acts or circumstances that involve the threat of harm, or that create a significant risk of harm to the health or welfare of a child. Four other states and the District of Columbia also
include threat of harm in statute, but interpret it as relative to neglect rather than physical abuse (Child Welfare Information Gateway, 2008).

2.2.2 Neglect

Neglect generally encompasses situations where a child is deprived of adequate food, clothing, shelter, medical care, or supervision (English, 1998). Neglect may stem from a parental lack of resources, deficits in parenting knowledge or skills, or insufficient social connectedness and support system. In the United States, neglect is the most commonly reported form of maltreatment, yet the least studied (Kendall-Tackett & Eckenrode, 1996). One reason may be that neglect can be difficult to define because it is subjective and value-laden (Turney & Tanner, 2001). The causes of neglect may have their roots in poverty, lack of social support, or lack of knowledge about how to parent (Turney & Tanner, 2001).

Very young children, from birth to three years old, are frequently the victims of neglect. In 2006, 72.2% of child victims from birth to one year old and 72.9% of child victims from one to three years old were neglected. Researchers studying chronic neglect point out the intra-relational patterns of neglect and its relationship to the development of healthy attachment. These intra-personal relationships between caregiver and child result in a caregiver who is either unable or unwilling to meet the child’s basic needs (Turney & Tanner, 2001). The result is a severe absence in "relationship of care". This relationship of care is seen as critical to the well-being of the child (Turney & Tanner, 2001).
2.2.3 Sexual Abuse

Sexual abuse is defined under CAPTA as:

The employment, use, persuasion, inducement, enticement, or coercion of any child to engage in, or assist any other person to engage in, any sexually explicit conduct or simulation of such conduct for the purpose of producing a visual depiction of such conduct, or b) the rape and in cases of caretaker or interfamilial relationships, statutory rape, molestation, prostitution, or other form of sexual exploitation of children, or incest with children (CAPTA, 1995).

States vary in the specificity of their definitions, although all States address sexual abuse in statute. Sexual exploitation, which includes involving a child in prostitution or child pornography, is usually an aspect of the definition of sexual abuse (English, 1998). In Ohio, a sexually abused child is one who is victimized through sexual contact, sexual conduct, or both that would qualify as a criminal offense. A child can be found to be sexually abused whether or not the perpetrator has been convicted of an offense (Child Welfare Information Gateway, 2008).

2.2.4 Emotional Maltreatment

Every State includes emotional maltreatment in its abuse and neglect statute, with the exceptions of Washington and Georgia. As of April 2007, Ohio and twenty-one other States, the District of Columbia and two territories provide specificity in their definitions of emotional abuse. This specificity includes language such as, “injury to the psychological capacity or emotional stability of the child as evidenced by an observable
or substantial change in behavior, emotional response, or cognition,” or as evidenced by, “anxiety, depression, withdrawal, or aggressive behavior,” (Child Welfare Information Gateway, 2008).

Along with neglect, children experiencing emotional maltreatment often show the greatest negative impacts on cognitive and language development, even after controlling for the effects of poverty. These effects continue at least into the school years (Barth, et al., 2007). In Ohio, an emotionally abused child is one who suffers mental injury at the hands of a parent or other adult responsible for the child’s care. “Mental injury” is defined as a “behavioral, cognitive, emotional, or mental disorder” caused by the act or omission of the parent or caregiver (Ohio Revised Code 2151.011). In 2005, only 9.9% of child maltreatment in Ohio was determined to be emotional maltreatment (Child Welfare Information Gateway, 2009).

A finding of emotional abuse, then, is difficult based on the criteria outlined above because a potential child victim must demonstrate mental injury that can then be linked back to the act or omission of a parent or caretaker. This is particularly difficult in the case of nonverbal infants who cannot describe the conditions to which they have been exposed. As a result, emotional maltreatment may be vastly under-reported and under-substantiated when reported. Given the clear link between emotional maltreatment and child mental health, the likely under-reporting of emotional abuse hampers researchers in their ability to delineate the differential effects of maltreatment types on child well-being outcomes.
2.2.5 Dependency

Some children enter foster care due to dependency. Under the Ohio Revised Code (ORC), a dependent child is, “one who lacks adequate parental care by reason of the mental or physical condition of his or her parents, guardian, or custodian.” A finding of dependency implies that the parent or caregiver is unable to care for the child but is not at fault. In other words, the child has not been abused or neglected, but cannot remain safely in his or her own home, and is in need of substitute care.

2.3 Theoretical Underpinnings

Theoretical assessments of the impact of maltreatment on children’s development and thus their educational experience assert that the relationship can be best understood by examining the context, environment, and developmental stage in which the maltreatment occurs (Yates, 2007; Ciccetti & Toth, 1995). This would assume that child characteristics and environmental characteristics each play distinct yet interactive roles with the experience of maltreatment in terms of its short and long term implications. In other words, factors associated with the increased risk of maltreatment exert their own influence on the child’s developmental trajectory, in combination with and distinct from the impact of maltreatment (Hecht & Hansen, 2001).

Maltreatment by a parent or primary caregiver occurs in the context of a parenting style and the larger caregiving environment. Various theories of child development have been applied to the phenomenon of child maltreatment as attempts to explain why maltreatment occurs or why some abused children (or adults abused as children) display maladaptive cognitive development or social behaviors. Because the type and quality of
the caregiving relationship and larger environment is critical to shaping the developing child, it is beneficial to look first at theories of maltreatment as delineated by Hecht and Hansen (2001) to begin to understand the maltreating caregivers’ behaviors, actions or inactions, and motivations. From there, we can begin to assess the impact on the cognitive, social, and emotional development that will support or hinder a child’s academic functioning.

2.4 Theories of Maltreatment

An understanding of the conditions that foster a maltreating environment provides a helpful context by which to discuss the effects of maltreatment on its young victims. There are many theories about why maltreatment occurs. Hecht and Hansen (2001), in their discussion of the etiology of child maltreatment and its effects, note that some theoretical perspectives view maltreating behavior as caused by a mental health problem or cognitive deficit in the parent or maltreating adult. Steele and Pollack (in Hecht & Hansen, 2001) propose a psychopathology model in which maltreatment occurs because of psychiatric disorders or personality disturbances in the maltreating adult. The social information processing model proposed by Milner (as cited in Hecht & Hansen 2001) primarily relates to physical abuse. This model explains the aggressive response of the parent from a developmental perspective, proposing that abusive parents have "pre-existing cognitive schemas which include beliefs that impact the way they perceive, evaluate, integrate, and act upon child-specific information." The model proposes that based on their existing schemas, parents only attend to negative cues and interpret the child as acting in a hostile manner, to which the parent responds harshly or abusively.
These perspectives can include unrealistic expectations of children's behavior, resulting in increased levels of frustration, and an abusive response (Hecht & Hansen, 2001).

In their discussion of the etiology of neglect, Turney and Tanner (2001) described maltreating parents as commonly having often grown up in environments characterized by hostility and a lack of nurturing. These parents feel helpless and powerless to meet the demands of life and pass these feelings on to their children, who adapt the same feelings. Communication among family members, family roles, and family structure are often dysfunctional. Skills needed for healthy resolution of conflicts are not modeled or taught. The authors propose that neglectful adults may commonly have insecure working models of attachment that interfere with their responses to children's needs, creating in effect a non-response, or neglect. These working models are powerful but amenable to change (Turney & Tanner, 2001).

2.5 Ecological Theories

Ecological theory has played an important role in the evolution of research on maltreatment effects. Further description of ecological theory illustrates how its tenets go hand-in-hand with developmental theories when applied to an examination of the impact of neglect on educational deficits, experiences, and outcomes of an already vulnerable population. With its origins in human developmental theory, ecological theory adds perspective to the influence of the larger environment and culture on developmental outcomes. Some researchers point to ecological influences in their explanations of the impact of neglect and other forms of maltreatment on educational experiences and outcomes.
2.5.1 Ecological Systems Theory

One of the founding fathers of ecological theory was Urie Bronfenbrenner, a scholar generally regarded as one of the world's leading influences in the field of developmental psychology (Hecht & Hansen, 2001, Berk, 1994). Belsky (1980) states that the way that social scientists approach the study of human beings and their environments was greatly influenced and broadened by Bronfenbrenner’s 1979 work entitled, “The Ecology of Human Development” which gave birth to the study of human ecology.

Through his Ecological Systems Theory, Bronfenbrenner delineated four types of nested systems, each containing roles, norms and rules that can powerfully influence the trajectory of development. Bronfenbrenner envisioned the social environment as consisting of various levels of influence. What he termed “ecological space” was divided among three hierarchical levels: the microsystem, which includes the family; the exosystem, which describes indirect forces within the larger social system that influence the microsystem; and the macrosystem, which includes the larger socio-cultural context. The microsystem includes the environment of the immediate household. The exosystem includes both formal and informal social structures that have indirect influence on development. The child welfare system could be viewed as part of the exosystem for families who are child-welfare involved. The macrosystem includes cultural beliefs and values that influence the micro and exosystems. Later, the mesosystem, which describes two microsystems in interaction, and the chronosystem, describing the evolution of the external systems over time, were added (Belsky, 1980; Hecht & Hansen, 2001).
2.5.2 Ecological Theories of Maltreatment

One of the social scientists influenced by Bronfenbrenner’s model of human development was Jay Belsky. Bronfenbrenner said that the three levels impact development equally. In his description of an ecological integration of child maltreatment (1980), Belsky differed from Bronfenbrenner in depicting factors as operating at various levels of the ecology making the determination of a single pathway that explains why maltreatment occurs impossible. Belsky incorporated the work of Tinbergen on behavioral development and Burgess (as cited in Belsky, 1980) on the behavior of child maltreatment to develop an ecological model to explain the causes of child maltreatment.

Tinbergen (as cited in Belsky, 1980) was an anthropologist who studied behavioral development in the context of parenting practices. He observed parenting practices in six different cultures to determine if early “practice” in child care promoted pro-social and positive parenting behavior in adulthood. After concluding that it did, Tinbergen theorized that behavioral development of children is shaped in part by the characteristics that parents bring with them to the family setting and to the parenting role. These parental characteristics were termed “ontogenetic influences”. Burgess (as cited in Belsky, 1980) wrote that Tinburgen’s observations regarding ontogenetic influences on behavioral development could be applied any human behavior, including maltreatment.

Burgess and Conger (as cited in Belsky, 1980) studied the positive and negative interactions between maltreating mothers and their children and a control group of non-maltreating mothers and children. They reported that maltreating mothers displayed 40%
less affectionate and supportive (positive) behavior and 60% more threats and complaints (negative behavior) than non-maltreating mothers. Additionally, children from maltreating families displayed 50% more negative behavior than control children. In their discussion, the researchers noted that it could not be determined from their study how much of the children’s negative behavior could be attributed to parental hostility and how much of the negative parental interactions were elicited by their children’s behavior (Belsky, 1980).

Belsky’ ecological integration of child maltreatment incorporated the ontogenetic layer of ecological influence into Bronfenbrenner’s model of the micro, mezzo, and macro systems as embedded influences that help to explain why maltreatment occurs. Belsky states:

While abusing parents enter the microsystem of the family with developmental histories that may predispose them to treat children in an abusive or neglectful manner (ontogenic development), stress-promoting forces both within the immediate family (the microsystem) and beyond it (the exosystem) increase the likelihood that parent-child conflict will occur. The fact that a parent's response to such conflict and stress takes the form of child maltreatment is seen to be a consequence both of the parent's own experience as a child (ontogenic development) and of the values and child-rearing practices that characterize the society or subculture in which the individual, family, and community are embedded (the macrosystem). p. 330
The emphasis that ecological systems theories place on the bi-directional relationship of relationships can hold particular significance for a child growing up in poverty or in a chaotic and stressful environment. Because the child may lack emotional-self regulation, and therefore be irritable or distractible, the child is more likely to illicit frustration, punishment, and ineffective parenting. These types of reciprocal interactions, ongoing over time, can compound their poor emotional self-regulation and negatively impact healthy development in other ways as well (Perry, 2001, Karr-Morse & Wiley, 1997).

Garborino, Gelles, and Lancaster (1987) attributed the causes of child maltreatment to complex interactions between individual and social factors. They saw societal institutions as critical because they can limit or shape the direct influences of the immediate, or family setting. A nurturing parent-child relationship is critical, and the degree to which nurturance can occur is a function of the impact of the institutional systems on the family unit. Ecological theory in the context of parenting and maltreatment, then, suggests that to reduce the likelihood of maltreatment, the immediate setting should be supported in nurturing the parent-child interaction by the institutional systems in which it is embedded, e.g. neighborhood, parental employment, educational, legal, economic, and political.
2.5.3 Ecological-Transactional Theory

The transactional model which expanded on the Belsky model includes biological, psychological, and social elements that can either be transient or enduring. These elements can also be either risk factors for maltreatment or compensatory in nature. Implications of maltreatment are stage-salient, meaning that their impact on the child’s healthy psychological development is increased or decreased depending on the developmental stage of the child and the nature of the maltreatment (Cicchetti & Toth, 1995). The ecological-transactional model builds on Belsky’s ecological theory of maltreatment but expands to the problem of violence in the family and community to further understand the effects of violence on development.

Building on prior theory linking ecological influences and child maltreatment, Cicchetti (1993) proposed an ecological-transactional model to explain the causes and consequences of maltreatment and how these are transmitted across generations. Cicchetti suggested that multiple levels of children’s ecologies including family, community, culture, and development affect and interact with each other to influence the likelihood of maltreatment occurring or not occurring.

Later, Cicchetti and Toth (1995) applied the ecological-transactional model to their discussion of the relationship between maltreatment and the development of violent behavior in children. Recognizing that many adults are subject to adverse family, community, and societal impacts, yet do not maltreat children or engage in violent behavior, they focused on factors that mitigate or exacerbate existing ecological conditions. These factors include biological, psychological, and social elements which
can be short or long-term conditions. Conditions that increased the probability of maltreatment were termed *potentiating factors* and those that decreased the likelihood of maltreatment were termed *compensatory factors*.

According to Cicchetti and Toth, maltreatment occurs only when potentiating factors outweigh compensatory ones. Some potentiating and compensatory factors are transient. They fluctuate and exist only temporarily. Transient potentiating factors are short term conditions and stresses, such as the loss of a job, illness, or marital stresses. Transient compensatory factors are periods of economic stability, harmony in relationships, and similar temporary, low stress periods. Other potentiating and compensatory factors are long-term and enduring, such as institutional racism, mental illness, or on the compensatory side, a resilient nature.

The ecological-transactional model expands on previous models by emphasizing the stage-salient implications of maltreatment on child outcomes. In Cicchetti and Toth’s model, the impact of maltreatment on the child’s healthy psychological development is increased or decreased depending on the developmental stage of the child and the nature of the maltreatment (Cicchetti & Toth, 1995).

2.6 Human Capital Theory

Human capital theory is a concept originating from the field of economics. Because it is closely related to developmental theory, it has recently been increasingly applied to early childhood policy. Wulczyn (2008) relates human capital theory as analogous to the concept of well-being when considered in the context of child welfare outcomes. The basic premise of human capital theory is that "investments in the
productive capacities of individuals can improve individual outcomes and that these investments might produce the greatest payoffs when made early in individual's lives." (Kilburn & Karoly, 2008, p.10).

Public and non-profit agencies who work with child welfare-involved children, particularly when they are providing foster care, typically rely on grants and other government funding to operate and survive. As such, they are subject to accountability and must justify the outcomes and benefits their programs hope to provide. Kilburn and Karoly (2008) in their discussion of how economic principles guide decisions regarding the allocation of resources, argue that the following considerations are significant to the decision-making process: a) need, b) outcomes, c) effectiveness, d) cost-savings, and e) marginal net-benefits. Program outcome measures represent the positive effects the program is expected to produce for individuals with insufficient human capital, or well-being. These positive effects result in reduced costs to society (Kilburn & Karoly, 2008).

When programs report service objectives or program goals such as reduced grade repetition, reduced placement in special education, or higher high school graduation rates, monetary benefits to society are fewer years spent in school, lower special education costs, and increased workforce preparedness. Long-term outcomes frequently cited as evidence for program need include unemployment and incarceration rates, welfare receipt and early pregnancies. Reduction in these negative outcomes result in positive community benefits such as increased tax revenue, lower criminal justice system costs, reduced social program costs, and lower medical costs due to low birthweight babies (Rand Corporation Research Brief, 2008).
In describing how human capital theory relates to other theories more commonly applied to human development, such as life course theory, Wulczyn (2008) points to the interconnectedness of events and conditions. Multiple, independent trajectories evolve in a dynamic and interactive process across cognitive, biological, and social developmental domains. Feedback effects across trajectories create a reciprocal relationship. Positive development in one domain increases the propensity toward positive development in another as well as strengthening the initial domain. The reverse is also true, whereby impairment in one domain can weaken others.

In human capital theory, this reciprocity is referred to as a process of dynamic complementarity. The concept of human capital as defined by Heckman (as cited in Wulczyn, 2008) is "a blend of innate ability, education, and skills acquired through life experience." When applied to child welfare definitions of well-being, the domains of interest include education and behavioral health, along with physical health. In other words the more "human capital" a child possesses, the more likely the child's developmental trajectories will be positive and trending toward healthy and adaptive outcomes. Human Capital Theory views strengths from a micro perspective, and as attributes an individual can acquire with systems support (Wulczyn, 2008; Heckman, 2001). Citing the cumulative and interactive impact of potentiating factors on the quality of outcomes, human capital theory stresses importance of CPS intervention at an early stage, when environmental influences that support or suppress the development of resilience can be fostered.
2.7 Learning Theories

A brief examination of learning theories commonly employed by school systems and educators in the United States illuminates the challenges to adaptation to and engagement in school that neglected children face within the school culture. Based on the behaviorist theories of Watson, Skinner and Bandura, environmentalist learning theorists perceive Kindergarten Readiness as the age when young children can respond appropriately to their environment. Behaviorism views development as a continuous process, rather than by life stages. Behavior of children and other individuals is shaped and directed by environmental control in the behaviorist view, i.e. reinforcement, conditioning, extinction of undesired responses, and negative reinforcement (punishment). The school environment has a role in shaping children’s response (Norlin & Chess, 1997).

Those espousing environmentalist learning theory perceive the ability to follow rules and regulations, and engage in teacher-initiated activities, and positive behavior in group settings as the mile-markers of adaptation. When children are not able to respond to the classroom and school environments, they are labeled and tracked into classrooms designed to control their behaviors and responses. Impaired emotional regulation, problems in social relationships and functioning, and cognitive delays are associated effects of neglect and other maltreatment. It follows that the environmentalists’ benchmarks would pose a challenge to maltreated children and may contribute to the dysfunction in development of autonomy and successful adaptation to school observed in maltreated children (Flores, Ciccetti & Rogosch, 2005). The model may also help to
explain the disproportionate representation of children in foster care who are tracked into special education classes, many for behavioral, not cognitive disabilities. Most schools function under the environmentalist model.

Constructivist learning theorists, in contrast, see learning not as adult directed, but as child directed. They believe that young children’s active interaction with the environment is necessary for learning and development to occur. When children have difficulty learning, they are not labeled, they are given individualized attention and the environment is customized to help the child address the difficulties he or she is having. The constructivist model is based on the developmental theories of Piaget, Montessori, and Vygotsky. These theorists viewed development, particularly cognitive development, as occurring in stages with each stage building on the previous stage and requiring increasingly complex forms of thought. Stage theorists view the environment as critical to the creation, development and modification of each stage (Norlin & Chess, 1997).

Maltreated children, particularly neglected children, are at risk of problems with the critical stage of attachment (Finzi, Cohen, Sapir & Weizman, 2000; Bowlby, 1973). Children with insecure attachments are inhibited from exploration of the environment, perceiving it as unsafe and their caregivers as non-protecting. Other aspects of neglect relate to the lack of developmentally stimulating experiences to which children are exposed, and deprivation of basic needs, that divert children’s attention from exploration of the environment to more basic concerns, such as food, protection, or basic comfort. The type of school environment, then, has implications for learning and adaptation to
school for maltreated children. The right type of school environment may help children to avoid some of the cumulative effects of maltreatment on their educational well-being.

2.8 Impact of Maltreatment on Academic Performance

Child maltreatment compromises healthy development by interfering with normal cognitive and social-emotional processes. It can create challenges to learning and successful adaptation to school (Ciccetti & Toth, 1995; Crozier & Barth, 2005). Maltreated children placed in out-of-home care typically perform one to two years behind their peers in school (Courtney, et al., 2004). Due to the stage-salient nature of the impact of maltreatment on development, as maltreated children fail to achieve developmental milestones, normal developmental tasks become increasingly difficult.

2.8.1 Social-Emotional Impact

Some researchers have found neglect to have a more detrimental effect on healthy social and emotional development than other maltreatment types. In a study of mother-infant dyads, Egeland, Sroufe and Erikson (1983) found that neglected children demonstrated greater degrees of difficulty in performing tasks at both forty-two and fifty-six months of age than did a control group or other maltreated children. When they began school, the neglected children showed deficits in several important domains, including cognitive performance, academic achievement, behavior in school, and social interactions. By the second grade, all were in special education programs.

Wodarski, et al., (as cited in Ayasse, 1995), evaluated the academic, emotional, and adaptive functioning of maltreated children. Neglected children were not found to be more emotionally impaired than physically abused children, but their deficits were more
pervasive. They had lower test scores, particularly in language skills. They also had higher rates of absenteeism, and lower academic performance ratings from teachers.

Egeland, et al. (1983) found that neglected children in their study demonstrated a greater level of deleterious development than children in other maltreatment groups. To explain these findings, they characterized young neglected children as having low self-esteem that interferes with their ability to engage in and master various developmental tasks. They also described the neglected children as lacking some resiliency traits that assist children in coping with their environments.

2.8.2 Impact on Cognitive Development

Trickett and McBride-Chang (1995) noted that maltreated children show cognitive deficits and poorer school performance than comparison groups, even with SES controlled, and that these deficits are evident when children begin school. Beginning as early as preschool, maltreated children have difficulty with cognitive and social tasks associated with successful adaptation to school. Comparisons of maltreated children and their non-maltreated siblings found that cognitive and language delays were similar between the two groups, however the non-maltreated children performed significantly better in school (Veltman & Browne, 2001).

2.8.3 Impact on Mental Health

Maltreatment has also been associated with the development of mental health problems and social-emotional difficulties. More than a third (38%) of youths in the 1992 DHHS study of emancipated youth had been diagnosed as emotionally disturbed. Foster children have high percentages of serious diagnoses, such as post-traumatic stress
syndrome (PTSD), conduct disorder (CD), depression, oppositional defiant disorder (ODD), and severe emotional disorder (SED) (Zetlin, Weinberg, & Kimm, 2003; Kortenkamp & Ehrle, 2002; Smithgall, et al, 2005). It is estimated that 85% of foster youth have an emotional disorder and/or substance abuse problem (AACAP/CWLA, 2003). These are often exhibited as acting-out behaviors in the foster home and school. Severe behaviors such as physical and verbal aggression, sexual acting-out, defiance, unruliness, and truancy are not uncommon among this population (Altshuler, 2003). A recent study found that 73% of youth identified with serious emotional disorders who have dropped out of school are arrested within five years (Seltzer, Bliss & Tantamjaric, as cited in Brazelton Center for Mental Health Law, May 2003).

Whether or not they emancipate from foster care, abused and neglected children are at increased risk of negative social-emotional and mental health outcomes. The Adverse Childhood Experiences Study (ACES) reported that maltreatment is associated with a higher likelihood of alcohol and other drug abuse, depression and suicide attempts, multiple sexual partners, unintended pregnancies, and risk of intimate partner violence (Schuyler Center, 2009). Neglected children in particular may have difficulty forming stable and healthy relationships with peers and others (CLASP Policy Brief, May 2008)

2.8.4 Behavior Problems

It is not unusual for maltreated children to display problems in adjustment and behavior that are manifested at home, in school, or in the community (Ayasse, 1995). Wodarski (as cited in Ayasse, 1995) studied the academic, emotional, and behavioral functioning of school-aged children who had been abused or neglected. Abused children
were found to have more problems in their academic functioning, lower self-esteem, elevated feelings of aggression, and pervasive adjustment difficulties. Older children were particularly affected and were more likely to display behavioral problems in school (Ayasse, 1995).

For foster children, behavioral and emotional problems may have their roots in histories of abuse and neglect, but when children enter foster care, challenging behaviors often lead to disrupted placements when foster parents are unable or unwilling to cope. This can begin a cycle of instability that leads to a pattern of disrupted attachments and school changes, placing children further and further behind. Behavioral problems become exacerbated. Increasing anger, compounded by separation and loss may take the form of serious acting-out behaviors, including physical and verbal aggression, defiance, inappropriate sexual conduct, and truancy (Altshuler, 2003).

2.9 Implications for Healthy Development

Recent research in the areas of cognitive and social-emotional problems known to be risk factors to healthy functioning in children looks at brain development. Genetic and prenatal influences such as low IQ, prenatal drug exposure, or a lack of prenatal care may predispose a child to problems with cognitive and academic functioning (Crozier & Barth, 2005; Karr-Morse & Wiley, 1997). Neurodevelopmental theories assert that much of this programming” of cognitive, social and emotional response occurs in the prenatal stages through the first three years of life, setting the stage for later vulnerability or resilience in the face of adverse experiences (Perry, 1997, 2001; Karr-Morse & Wiley, 1997).
2.9.1 Neurodevelopmental Theory

For some children, human capital is compromised before birth. Researchers studying early brain development assert that much of the “programming” of cognitive, social and emotional response occurs in the prenatal stages through the first three years of life, setting the stage for later vulnerability or resilience in the face of adverse experiences (Perry, 1997; 2001; Karr-Morse & Wiley, 1997). Prenatal exposure to drugs and/or alcohol can adversely affect this early brain development, resulting in impulsivity and emotional dysregulation (Perry, 1997).

After birth, appropriate affective experiences beginning in the earliest stages of infancy are critical to fostering the capacity to form healthy attachments (Perry, 1997). Maltreatment can compromise this critical early attachment relationship, and is associated with insecure attachment in combination with other vulnerabilities, including anxiety, and depression. All of these can inhibit development of autonomy and successful adaptation to school (Flores, Cicchetti, & Rogosch, 2005; Hildyard & Wolfe, 2002).

Some researchers studying attachment and mother-infant dyadic interactions stress the significance of neurodevelopment in laying some of the foundation for the quality of future interactions. Brain development begins with the brain stem, which controls the most basic functions needed for survival, such as blood pressure, heart rate, and body temperature. Next to develop is the midbrain, controlling such functions as appetite and sleep. The limbic brain is where emotion and impulse are situated. Last to develop is the cortex, where logic, planning, and cognition take place (Perry, 1997;
Researchers studying early brain development and trauma believe that children with prenatal exposure and/or early trauma may have impulse control problems, attention deficits, and attachment problems because of the impact of those influences on the limbic brain (Perry, 1997; Eckenrode, et al, 1993; Hildyard & Wolfe, 2002).

Any factors which increase the activity or reactivity of the brainstem (i.e. chronic stress) or decrease the moderating capacity of the limbic or cortical areas (neglect) will increase an individual’s aggressivity and impulsivity (Perry, 1997, 2001). Chronic or intense activation of the fight or flight response, activated by repeated stimulation of the amygdala and the neurochemicals it floods the body with, can make the individual so sensitive to the associated cues, that the natural alarm system will not subside as it should, resulting in hypervigilance. In young children, this manifests as a state of chronic fear or hyperarousal. The child’s brain circuitry needed for other developmental tasks can be diverted to monitoring for threatening cues in the environment. If the children are too young to run or resist the threat, the neurochemical responses can enable them to freeze or go numb and remove themselves emotionally. This is a surrender or dissociative response. Over time, these can become permanently damaging neurological responses (Perry, 1997).

Children with neurodevelopmental vulnerabilities, in combination with the effects of chronic abuse and neglect, are less likely to have the resilience necessary to modify their adaptive behavior, which would allow them to adjust and cope with the non-abusive environment. If they cannot adjust and continue to respond to the world through the more primitive brain responses, they find that the environment confirms their belief that it
is hostile. These risks can be greatly exacerbated by environmental influences such as maternal rejection, abuse and neglect, and the modeling of violence as a way to cope with stress. These children have increased risk of school failure, drug abuse, and criminality (Perry, 2001, Yates, 2007).

Schore (2002) studies the relationship between inhibited maturation of the orbitofrontal cortex and attachment. This part of the brain contains neurons that are especially sensitive to facial expressions. The maturation of the orbitofrontal cortex is directly influenced by the nature of the attachment relationship. Schore believes that a negative early relationship can lead to a lifelong inability to regulate the intensity, frequency and duration of primitive negative states while under stress, such as rage, terror or shame. Recent studies of this part of the brain show a relationship with PTSD.

Stressing the critical importance of early relationships, Schore posits that the child’s first relationship, usually with the mother, acts as a template for the imprinting of circuits in the child’s developing, emotion-processing right brain. This shapes the individual’s likelihood to enter into adaptive or maladaptive relationships later on in life (Schore, 2002). Neglect can compromise this critical early attachment relationship, and is associated with insecure attachment in combination with other vulnerabilities, including dysfunction in emotional regulation, anxiety, and depression. All of these can inhibit development of autonomy and successful adaptation to school (Flores, et al., 2005).

2.10 Implications for Infancy and Early Childhood

Researchers studying the impacts of maltreatment from a developmental perspective found evidence of problems in social-emotional functioning as early as
infancy and early childhood (Kendall-Tackett & Eckenrode, 1996). By the age of 24 months, maltreated infants have been found to be less enthusiastic, more frustrated, and angrier in problem solving tasks than non-maltreated children. At 42 months, neglected children demonstrated poor impulse control and less creativity in problem solving that the other maltreated children or the control children. Maltreated children have been found to have lower ability to engage in age-appropriate play at ages 12, 18, 24, and 36 months (Hildyard & Wolfe, 2002). Kendall-Tackett and Eckenrode (1996) observed maltreated preschoolers to be dependent, unhappy group, and with low self-esteem. Karr-Morse and Wiley (1997) described problems with coping and emotional regulation associated with maltreated children.

2.10.1 Attachment

Neglectful or abusive caregiving can result in insecure attachments (Hildyard & Wolfe, 2002), and problems with attachment are associated in the literature with problems in adaptation to and success in school (Flores, et al., 2005; Hildyard & Wolfe, 2002). Perry (1997) describes appropriate affective experiences beginning in the earliest stages of infancy as critical to fostering the capacity to form healthy attachments. Children who were victims of severe neglect or emotional neglect as infants or toddlers were more likely to exhibit aggressiveness, poor ego control, and lower resilience in middle childhood leading to problems with adjustment and adaptation to school and other developmental experiences (Yates, 2007).

Attachment theory is primarily associated with the work of Bowlby and Ainsworth. The attachment bond can be described as a specific and enduring relationship
developed with a primary caretaker (usually mother) over the course of the first year of
life (Turney & Tanner, 2001). According to Bowlby (1973), the construct of attachment
relates to the role that interactions play in personality development. Bowlby defines an
"attachment figure" as an available, supportive, responsible caregiver. This attachment
figure provides the child (infant) with a "secure base." When infants have the ability to
use the secure base as a source of comfort, they feel free to explore the environment and
engage in other non-attachment behaviors. They develop a basic sense of trust and
security that facilitates risk-taking behaviors and thus, further development.

When infants interact with attachment figures, they internalize a "working model
of attachment." These "working models of attachment" are mental representations of
significant persons from the environment and themselves which manifest as unique
attachment styles. These attachment styles continue to influence patterns of cognitions
and behaviors in future close relationships and social interactions (Turney & Tanner,
2001). The nature of the mother-child relationship affects the quality of the relationships
that a child forms with others (Toth & Cicchetti 1996; Turney & Tanner, 2001).

2.10.2 Interpersonal Relationships

Secure attachment style is associated with better social and cognitive
developmental outcomes; however findings regarding insecurely attached infants were
mixed, indicating that the presence of positive relationships with alternative caregivers or
resiliency characteristics may mitigate the negative effects (Cicchetti & Toth, 1995).
Maltreated children, as a result of caregiving that is characterized by inadequate,
inconsistent, harsh and rejecting interactions, tend to develop insecure attachments. In
later childhood, insecure attachments have been associated with difficulty in peer relationships, aggression, depression, and low self-esteem. The ability to express and regulate emotions may also be compromised in these children, contributing to further interpersonal difficulties (Hecht & Hansen, 2001).

Pollack and colleagues explored recognition of emotion among 16 neglected, 17 physically abused, and 15 non-maltreated children, ranging in age from three to five years. They found that neglected children had difficulty discriminating between different emotional expressions while physically abused children tended to perceive emotions as angry, even when they were neutral. Non-maltreated children, by contrast, were better able to distinguish between dissimilar emotional expressions in others. The researchers concluded that children’s experiences influence the ways that they interpret and understand the emotional cues of those around them (Pollack, Cicchetti, Hornung, & Reed, 2000).

2.11 School Performance

Researchers studying school readiness relate home environment, quality of early care, and parental involvement in children’s education to the likelihood of academic success for young children beginning kindergarten (Vandervere, Pilzer, Halle & Hair, 2004). Child characteristics such as physical and motor development, social and emotional development, approach to learning, language skill, cognition and general knowledge are considered important domains that predict a good start at academic success. Vandervere, et al. (2004) observed that the number of domains in which a child possesses competence has been associated with likelihood of academic success in the first
grade; however the domains do not appear to exert equal influence. Social and emotional competence is critical as it has been found to be a greater predictor of academic success in first grade than competence in language and cognition (Vandervere, et al., 2004).

Vandivere, et al. (2004) found that for children, five domains of development and skill are critical to a child's readiness for school: a) physical well-being and motor development, b) social and emotional development, c) approaches to learning, d) language, and e) cognition and general knowledge. Children who have competence across all five domains are more likely to be academically successful in first grade than those with competence in only one or two domains. For children who are not strong in all five domains, those who are socially and emotionally ready, but below average in language and cognition fare better in first grade than do those who are competent in language and cognition, but not ready socially or emotionally.

Neurodevelopmental and attachment theories associate the consequences of maltreatment with insecure attachment, difficulty developing healthy social relationships, and problems with regulation of emotions. It can be seen that neglectful early experiences can leave children at a disadvantage for early success in school.

In interactions with their siblings and mothers, young neglected children were more passive and less interactive than other children (Kendall-Tackett & Eckenrode, 1996). In day care observations, neglected children were more socially isolated and avoidant in peer interactions than other maltreated children or non-maltreated children. They were more physically aggressive, uncooperative, and non-compliant than non-
maltreated children, although not to the degree physically abused children displayed those behaviors (Hildyard & Wolfe, 2002).

Academic success in the first grade has been cited as a significant predictor of later success (Vandervere, et al., 2004). Maltreated children, including neglected and abused and neglected children, are more likely to have cognitive deficits that are evidenced by lower grade achievement and performance on standardized tests. Consistent with the psychopathology model of maltreatment and developmental theory, maltreated children whose caregivers had mental health problems were more likely to score one or more standard deviations below the mean in math, although not in reading (Crozier & Barth, 2005). Maltreated children whose current caregivers reported significant behavior problems were only marginally more likely to score poorly on standardized math tests, and not in reading. However, the relationship between teacher-reported significant behavior problems and poor math functioning was significant. This could signify emerging behavior-induced academic problems (Crozier & Barth, 2005).

In a sample of children six to fifteen years old taken from the National Survey of Child and Adolescent Well-Being (NSCAW), maltreated children were 2/13 times as likely to score one or more standard deviations below the mean on the Kaufman Brief Intelligence Test (K-BIT), the test used to measure cognitive functioning. To measure academic functioning, two standardized test measures were used; one for math and the other for reading. Maltreated children were 1.92 times likely to score one or more standard deviations below the mean on the standardized reading test and 2.75 times likely on the math test (Crozier & Barth, 2005). Although examined in the study, age,
gender, or maltreatment type were not found to be statistically significant factors, although other researchers have had different results, specifically with regards to age and maltreatment type (Crozier & Barth, 2005).

Studies have also found that foster children tend to score lower on standardized tests than non-foster children. A study in Washington State reported that children who were in foster care and attended public schools in grades three, six, and nine scored sixteen to twenty points lower on standardized tests than non-foster children (Burley & Halpern, 2001). In Chicago, nearly fifty percent of third to eighth grade children in out-of-home care scored in the bottom quartile on the reading section of the Iowa Test of Basic Skills (Courtney, et al., 2004; Smithgall et al., 2005).

The fact that maltreating parents, particularly neglectful parents, are less likely to encourage and supervise homework, read to children and provide otherwise stimulating activities and environments, and involve themselves with their child's academic progress may contribute to learning deficits in maltreated children (Kendall-Tackett & Eckenrode, 1996). Maltreated children experience continued decline in cognitive performance in the school years. Erikson & Egeland (as cited in Hildyard & Wolfe, 2002) reported that neglected children scored lower on standardized achievement tests, had difficulty coping, and were more inattentive and disengaged. In the primary grades, 1, 2, and 3, children who were emotionally neglected prior to age 2 yrs. had significantly lower performance on the Peabody Individual Achievement Test.

Kendall-Tackett and Eckenrode (1996) in their study of school-aged children with histories of maltreatment noted that the children’s grades dropped in the transitioning
from elementary to junior high. Although the non-maltreated children also performed worse in reading and math during this period, the neglected and abused/neglected children showed a greater decline (Kendall-Tackett & Eckenrode, 1996).

Neglected children have been found in at least two studies to have the lowest performance in school of all maltreated children; a finding that is consistent from Kindergarten through grade 12 (Eckenrode, Laird & Doris, 1993; Leiter & Johnsen, 1994). Longitudinal data on the relationship between neglect and adolescent and adult outcomes is lacking, however maltreated youth are at increased risk of runaway behavior and are at risk for delinquency as they get older (Hildyard & Wolfe, 2002). They also will tend to have anxiety and depression.

In middle school, maltreated children are more likely to have lower grade achievement and perform worse on standardized tests than non-maltreated children. Kurtz, et al., (2003) examined the academic performance of 139 abused and neglected children, 8 to 16 years old. They found that these children, as a group, demonstrated cognitive, behavioral, and emotional problems that contributed to poor academic performance and greater rates of grade retention than the control population. Leiter and Johnsen (1994, 1997) contrasted maltreated children’s school performance prior to and after their first report of abuse or neglect. They found that after the first maltreatment report, children in the study were more likely to have falling grades, higher absenteeism, more behavioral problems in elementary school, grade retention, and placement in special education.
The authors followed this study with another, using a random sample of children reported as maltreated and a fixed effects method. Time-varying variables were school outcomes, maltreatment characteristics, age, and participation in poverty programs while controlling for other variables, such as race. The analysis developed models of grade point average (GPA) and absenteeism trajectories for 715 school-aged children. The models indicated that adverse effects accumulate over time, but that children may follow different trajectories. A limitation of the study is that the data were collected in the 1980’s (Leiter, 2006).

Foster youth have high rates of school drop-out. Most studies report high school graduation rates for foster youth ranging from 40% to 70%, significantly lower than the 85.6% rate reported by the United States Census Bureau in 2004 (Casey Family Programs, 2008). It follows that post secondary education completion rates are very low for former foster youth, ranging from 1.8% to 7.7% in most studies (Casey Family Programs, 2008).

Youth who leave foster care without a high school diploma have seriously limited job prospects. They are more likely than other young adults to enter the criminal justice system and are over-represented among the homeless population (Casey Family Programs, 2001; McMillen, et al., 2003; Blome, 1997; Ayasse, 1995; Aaron & Zweig, 2003).

Underscoring the importance of healthy social and emotional development, higher cognitive functioning does not appear to be protective against behavior problems for maltreated children (Crozier & Barth, 2005). In middle childhood physically abused,
neglected and “mixed” children have been found to have school problems including maladaptive behavior in the classroom, low grades, poor standardized test scores, and frequent grade retention, with younger children and neglected children most affected (Trickett & McBride-Chang, 1995). Comparisons of maltreated children and their non-maltreated siblings found that cognitive and language delays were similar between the two groups, however the non-maltreated children performed significantly better in school (Veltman & Browne, 2001).

Parents with compromised cognitive functioning may be less likely to provide quality or stimulating care for their children. In addition, chaotic, unpredictable, or impoverished postnatal environments can make both parenting and learning more difficult (Crozier & Barth, 2005). Meanwhile, developmental and ecological risk factors for academic problems increase as children grow older. Crozier and Barth (2005) found that when examining the cumulative effects of multiple risk factors in combination with maltreatment, the percentage of children scoring poorly on measures of cognitive and academic functioning increased as the number of risk factors increased. The relationship between number of risk factors and low score was significant for reading and math, but only marginally significant for cognitive measures (Crozier & Barth, 2005). Their study indicates that maltreatment in combination with multiple additional risk factors results in cumulative risk for compromised cognitive and academic functioning (Crozier & Barth, 2005).
2.12 Poverty as a Confounding Factor

Poverty is associated with both increased risk of neglect and other maltreatment and academic problems independent of maltreatment (Mulsow & Murry, 1996). For this reason, researchers generally want to control for poverty status when other risk factors are the variables of interest in studies of academic performance. Maltreated children in one study were found to be more likely to perform one or more standard deviations below the mean on standardized tests of cognitive functioning and reading and math functioning (Crozier & Barth, 2005). Non-poor children in the maltreated sample also performed poorly therefore maltreatment appears to exert an independent effect. A possible limitation to these findings however, is that the non-poor children in the sample of maltreated children may have lived in families only marginally above the poverty level (Crozier & Barth, 2005).

2.13 Child Welfare Involvement

Most children entering foster care come from poor and underprivileged families. If they enter foster care, they bring with them the effects of exposure to ecological risk factors such as poverty, chaotic and unpredictable environments, and inadequate health care, social service systems, and schools. Although entry into foster care might be expected to ameliorate some of the negative impacts of an early environment that were not conducive to positive school performance, Ayasse (1995) described why all too often this is not the case. Children in foster care, especially those with behavioral issues, move often. Each move may bring with it a change in schools. Children may have trouble learning as they struggle to adjust to a new school, different teachers, curriculum, and
peers. Multiple school settings become a very real barrier to academic progress. Children who have special education needs may not be assessed in a timely manner, because by the time teachers are beginning to get a handle on their needs, they have moved on to a different school. Foster children who experience school continuity achieve better academic outcomes than children who change schools (Avery, 2003).

Advocates for Children (AFC), a not-for-profit agency dedicated to quality education for children of New York City, in their study of the educational status of NYC foster children, found that no educational data were being collected by the school system or by DCFS. They used a survey method to obtain information about a) access to preschool and school programs, b) continuity of educational services, and c) quality of educational services for foster children in New York. They collected 280 surveys from foster children, foster parents, biological parents, caseworkers, educational personnel and others. The study findings are hampered by a proportionately low representation of foster parents (5% of respondents) and biological parents (7% of respondents). Among the findings of the study was that over 75% of the foster children respondents (N=70) said that they had to change schools upon entering foster care. Also, nearly 65% had changed schools in the middle of the school year, and 22% had transferred schools twice within the school year (Advocates for Children of New York, 2000). Thus, children in foster care face additional academic barriers of lack of continuity and stability and “systems neglect.”

In recent years, particularly since passage of the American Safe Families Act (ASFA) in 1997, increasing attention and interest has focused on the interventions
employed by the child protection system (CPS) and the degree to which those interventions result in positive short and long-term outcomes to children, families, and society (Christian, 2003; Courtney, et al., 2004). In other words, the child protection system is increasingly constrained to examine its responsibilities beyond its historic role of removing children from environments deemed unsafe, and placing them in alternative settings until problems can be resolved. While safety is paramount, it is recognized that children are not static creatures whose development can be put on hold while the adults around them, over the course of months or years, attempt to resolve the issues that brought them to the attention of CPS authorities. As with all children, those in foster care need, and are entitled to, environments that nurture and advance optimal social, emotional, and academic development.

Yet many children in foster care do not receive the mental health and academic services they need (Ayasse, 1995; McRoy, 2003). This is particularly true for younger children. As a result, children who are dealing with the trauma of separation from their homes and families may have difficulty learning as they adapt to new and frightening environments and the uncertainty of their futures. Further cognitive impairment may result. Crozier and Barth (2005) found that maltreated children with previous CPS involvement were more likely to score poorly on standardized tests of reading and math, with math performance being the most significant finding. Younger neglected children appear most effected by behavior problems related to problems in healthy social-emotional development (Trickett & McBride-Chang, 1995).
Much is still to be learned about the types of services that children and youth in foster care need. A rigorous, experimental study in 2008 evaluated a tutoring program to determine its effectiveness for fourteen and fifteen year old foster youth in Los Angeles County, California. Youth recruited for participation in the program (treatment youth) were one to three years behind grade level in reading and/or math. The program, called Early Start to Emancipation Preparation (ESTEP) offered fifty hours of tutoring in the foster home. In the ESTEP program design, tutors were to be more than just tutors; they would form relationships and become positive mentors as well.

Impact evaluation found no positive effect from the tutoring for treatment youth. In fact, performance deteriorated. Evaluators concluded that tutoring services that do not directly relate to the material being covered in school may not effectively engage youth or provide the needed benefits. They also concluded that tutoring relationships such as those provided by ESTEP are not likely to result in long-term supportive adult relationships (DHHS, 2008). Findings point to a critical need to understand the types of social-emotional and academic support services that foster children need and how services should be adapted for children of different ages. Future research can help to fill this gap in the puzzle.

2.13.1 Behavioral Problems

Many children in foster care have behavioral problems that are manifested in the classroom. Some advocates, such as the Coalition for Juvenile Justice identified the consequences of inflexible school discipline policies as a barrier to education for vulnerable youth (Aron & Zweig, 2003). The schools, in an attempt to maintain order,
respond with zero-tolerance and other disciplinary actions to remove these children from the classroom. As seen by many experts and observers, the result is that vulnerable youth being disproportionately suspended or expelled (Smithgall, et. al., 2004). When children are excluded from school, the likelihood that they will eventually succeed is decreased.

School suspensions and expulsions are a problem for schools and caseworkers and the impact on children can be critical and long-lasting. At the same time, as argued by Veltman and Browne (2001), the school environment can provide an opportunity for maltreated children to find support, positive adult influences and secure relationships. At school, teachers can praise children’s accomplishments, foster self-esteem, and provide opportunities for positive development. Children who are excluded from school can lose these important opportunities and benefits to their emotional well-being. Despite this, school and child welfare systems do not often have procedures to facilitate effective collaboration, and very often have non-constructive, hostile relationships that discourage cooperation and communication (Altshuler, 2003).

Blome (1997) conducted a longitudinal study of former foster youth and a matched group of non-foster youth to learn about how the high school experiences of foster youth differed from similar youth who lived with their biological families. The former foster youth in her study were more likely to report having had disciplinary problems in school and were much more likely to drop out of school.

Children in foster care are often placed in special education classes, many of them due to a behavioral disability (Smithgall, et al., 2004). The Bazelon Center for Mental Health Law (2003) based in Washington D.C. recently examined the effectiveness of the
Individuals with Disabilities Education Act (IDEA). The Center found that the legislation does not sufficiently protect children with behavioral problems from a propensity toward suspension and expulsion reflected in many school policies. Children who are frequently suspended and cannot succeed in school are likely to drop out.

2.14 Long-term Impacts

In FY 2004, 23,121 young adults, or 8% of the children exiting foster care, emancipated from the child welfare system (U.S. Department of Health and Human Services, 2006). Of those, nearly two thirds will not have completed high school by the time they emancipate (McMillen, et al., 2003). Research describing the well-being outcomes of emancipated foster youth suggests that these young adults are at increased risk of mental health problems, substance abuse, early pregnancy, and criminal activity (Anne Holton, Testimony to Congress pp.6).

As adults, childhood maltreatment appears to contribute to cognitive deficits. In a follow-up study conducted of adults maltreated as children, Perez and Widom (as cited in Hildyard & Wolfe, 2002) found lower scores on intelligence tests at 28-years-old. Childhood maltreatment has also been associated with violent behavior and criminality, personality disorders and alcohol problems in adults (Karr-Morse & Wiley, 1997; Cicchetti & Toth, 1995), as well as dissociation and dysthemia (Hildyard & Wolfe, 2002). Research available at this time shows little difference in the long term negative effects of different types of maltreatment.
2.14.1 Societal Costs

Beyond the human costs to maltreated individuals, childhood maltreatment carries significant costs to society. Adults maltreated as children have been found to have significantly higher rates of public aid receipt, incarceration, arrest conviction, and substance abuse than the general population (Mersky, Robertson, Topitzes, and Reynolds, 2008). The Adverse Childhood Experiences Study (ACES) found that maltreatment is associated with increased likelihood of alcohol and other drug abuse, depression and suicide attempts, multiple sexual partners, unintended pregnancies, and risk of intimate partner violence (Schuyler Center, 2009). The Northwest Foster Care Alumni Study (2005) conducted by the Casey Foundation and the Midwest Evaluation of the Adult Functioning of Former Foster Youth (2007) conducted by Chapin Hall found that when compared to non-foster care youth, former foster youth attain fewer years of education, are more likely to be poor, have mental health problems, abuse drugs, have criminal justice system involvement, and to become parents while still in their teens and/or while unmarried. Children in foster care and adults who have been in foster care may have difficulty forming stable and healthy relationships with peers and others (CLASP, 2008).

2.15 The Lucas County Initiative

2.15.1 Background

Across the United States, there is a small but growing number of existing programs designed to address educational outcomes for foster children. The most prominent of these include Casey Family Programs (Casey), Foster Youth Services (FYS), California’s Liaison Program (part of the state legislation, AB 490), (FYS), New
York City’s Project Achieve, and Washington State’s collaboration with non-profit Treehouse. There are underlying commonalities among the programs and models discussed. All stress the promotion of school and placement stability and reduction or elimination of enrollment delays. In addition, there seems to be consensus that special advocacy is needed in order for systemic barriers to be removed for foster children.

Besides Lucas County, there are two county child protection agencies with educational initiatives developed and funded at the local level. Hamilton County, which encompasses the city of Cincinnati, has developed a partnership with the Cincinnati city schools and local mental health system. The other Ohio county PCSA program is Lorain County’s “Kids in School Rule”. This program provides individual tutoring in their homes for children in their own homes as well as children in substitute cared. At the time of this writing, the Hamilton County Program did not have evaluative data available. The Lorain County Program utilized pre and post testing of cognitive skills to assess the effectiveness of tutoring services. Results appear very positive, indicating that children performed better on cognitive tests after the tutoring. Lucas County was the only program that had collected school grade data as a program component.

In 2003 the Lucas County Children Services Board (LCCSB) became concerned about low rates of high school graduation among the youth emancipating from its care and custody. The agency has among its services an Independent Living (IL) Program to assist foster youth aged sixteen years or older (since lowered to fifteen years) to prepare for self-sufficiency. Specialized caseworkers in the Independent Living program and foster parents encourage, advocate, and support youth to remain in school, study, and
amass high school credits. Still, approximately two thirds of youth were emancipating at
the age of eighteen or older without a high school diploma or a GED. Although some did
graduate and go on to college, the number was very low. The LCCS administration and
Board recognized that without an adequate education, these young adults were being
disconnected from the agency’s care without the tools and preparation basic to economic
well-being. They focused their attention on the Independent Living Program. Why was
the program not meeting its educational objectives for emancipating youth?

Discussions with IL staff and a deeper look into the educational status of older
youth in foster care brought to light a larger problem: the identification of education as
an issue at age sixteen is too late for many foster youth. At their first contact with their
newly-assigned Independent Living caseworker, many foster children had little academic
stability and had minimal, sometimes no high school credits. Caseworkers reported that
the due to their maltreatment histories and experiences in the system, youth often had
such severe behavioral and/or mental health issues that it was all workers could do to try
to maintain them in stable placements. School advocacy was too often reduced to trying
to keep youth from being suspended or expelled from school. The IL response led
agency administrators to inquire about the academic performance of younger children in
foster care. This led to the conclusion that agency staff did not know how well foster
children were performing academically since, although some educational information
was included in individual case files, aggregate information was not being collected.
To ascertain whether it was doing enough to help foster children succeed academically, the LCCS Board contracted with The Beech Acres Educational Advocacy Center and The Child Welfare League of America (CWLA) to conduct an assessment of the educational performance and academic needs of children in the agency's foster care system. The study utilized key stakeholder surveys, focus groups, case record reviews, and an analysis of school system data. The Beech Acres study included the demographic characteristics of all of the children served by LCCS during the 2001-2002 academic year, educational data for LCCS children attending Toledo Public Schools, and case record review information regarding educational monitoring and service provision from a random sample of twenty children in standardized testing grades. Approximately half of the children had entered foster care prior to age 6 years and the average length of time spent in care was 29 months. Of those, researchers analyzed school performance data for 188 children who attended the Toledo Public Schools (TPS), the county's largest public school system. Variables examined were days absent from school, discipline experiences, and performance on state standardized tests (Beech Acres, 2003).

The researchers reported that, consistent with national trends, LCCS foster children had high rates of disciplinary actions and unexcused absences from school. A comparison of performance on standardized tests showed that the foster children had significantly lower rates of passage than children in the TPS system overall and children across the State of Ohio. Evidence of educational support, monitoring, and advocacy in case records was low. The final report, disseminated in December of 2003, included recommendations that the agency address barriers faced by foster children that place
them at disproportionate risk of academic failure through, a) increased provision of direct academic support, b) increased attention to and monitoring of children's educations by all adults involved with the child, and c) increased collaboration and communication with the school systems (Beech Acres, 2003).

2.15.2 Program Model

The assessment of the educational status and needs of children in the agency's foster care system by Beech Acres and CWLA, was presented to the Lucas County Administration and Board of Directors in December 2003. Findings were consistent with national research indicating that the study population had lower academic performance, more disciplinary episodes, and more academic barriers than their non-foster peers. A program logic model was developed that incorporated the findings and recommendations from the study as strategies to achieve five objectives seen as leading to achievement of the program’s long-term goal; to improve the educational achievement of children in foster care.

As of the completion of this study, the LCCS Education program was housed in the agency’s Quality Improvement Division and funded through general operating funds (levy dollars). Administration and management responsibilities were shared primarily by Managers within the division. Three full-time staff members were assigned to the program; an Educational Services Specialist and two Educational Monitors. Key components are described in the following sections.
2.15.3 Educational Assessments

All school-aged children who enter agency custody and are not already under an Individualized Education Plan (IEP) through the school are administered a standardized educational assessment. The instrument used is the Norris Educational Achievement Test (NEAT), developed by Janet Switzer, Ph.D. and Christian P. Gruber, Ph.D. NEAT informational material states that the test was normed on a nationally representative sample of nearly 3000 students and is used for children from four to seventeen years eleven months of age. The purpose of the test is to assess educational readiness and achievement. It provides cognitive and language scores corresponding to achievement level by academic year and month. No Cronbach Alpha statistics were located for this test.

The assessment is administered by a Ph.D. level provider under contract to the agency. The assessor utilizes the NEAT results and information provided regarding the child’s social-emotional functioning collected in a state form called the Child Behavioral Check List (CBCL) to assign an educational need level of high, moderate, or low. The assessment also includes critical recommendations for educational interventions such as targeted tutoring, further assessment, etc. Copies of the educational assessment are provided to the child’s caseworker, foster parent, and teacher. Children who are in special education classes when they enter care are not assessed because they have already been assessed by the school system, although through a different instrument.
2.15.4 Educational Intervention Services

Services available to support the educational program include alternative suspension services, tutoring, and child mentoring. Alternative suspension services are a contracted service that is a part of the Education Program. The service was specifically filled through a Request for Proposals (RFP) as a means to prevent children who are chronically suspended or expelled from falling further behind academically. The contracted service provides a supervised setting for suspended/expelled children to go during the school hours. This relieves working foster parents from the problem of missing work when children are suspended or expelled. While attending alternative suspension services, children are assisted with school work by staff who also work with the children to identify and address the underlying causes of chronic suspensions or expulsions.

Tutoring services may be provided by a provider with a contract with LCCS or by a non-contracted provider. Because it is a public child protection agency, the protocol used by the Education Program in regard to accessing tutoring is to try to locate free services first, and if unable to identify an appropriate non-cost tutoring provider, to request a contracted tutoring service. Free tutoring may be available through the child’s school, No Child Left Behind (NCLB) funding, or churches.

Child mentoring services are another contracted service that is a part of the Education Program. Service providers were identified, resulting in multiple contracts. Similar to tutoring, children may receive mentoring by a contracted or a non-contracted service provider. After a request for child mentoring services has been processed, a
(usually paid) mentor is assigned to the child by the agency service provider. The number of mentoring service hours to be provided per week is usually stipulated by the contract between the service provider and LCCS. Contracts and services provided differ among providers and the service, the provider, or both can change when the contract comes up for re-bid, as required by procurement laws for government agencies. During the 2008-2009 school year, which was the period of time under study, child mentors were expected to spend time with their mentees individually and in group activities with outer mentors and mentees.

2.15.5 Educational Incentives

Each grading period, Education Program staff review the grades in the Education Database to identify children who are doing well or making significant progress. Children whose grades (in academic subjects only) include all A’s, B’s and not more than one C are given a gift card worth $10.00 to a local department store. Children who do not qualify for the gift card but have made “significant progress” since the last grading period are given a coupon for free food from Burger King, the local franchise which has partnered with the program to provide these coupons.

2.15.6 Educational Database

It is the role of the Educational Services Specialist (ESS) and Educational Monitors (EM) to monitor the grade progress of children assigned to them. The data collected for this study covers the period of time from 8/1/08 to 6/30/09 – basically the 2008 – 2009 school year. At that time, the ESS was assigned only foster children who
were in special education. The two EM positions were not in place until October of 2008. They were assigned foster children with high and moderate educational needs.

To collect and store academic performance data, the program utilizes a data link from the Toledo Public Schools (TPS), which is the major public school system in Lucas County. After each grading period, TPS sends an electronic copy of its grade data for middle school and high school children in the custody of LCCS to the agency’s Manager of MIS, who performs data validation by checking each name to verify that the child is in the agency’s custody, and updating with client IDs. The client ID is the agency’s unique identifier for children and adults it services. Grades of children in elementary school are not provided by TPS because they are hand-written on grade cards by teachers rather than stored electronically. After the TPS academic data is cleaned, the spreadsheet is sent to the Quality Improvement Division (QI), the part of the agency where the Education Program is housed.

While the system described above provides some grades to LCCS electronically, many are left out. The TPS data link does not provide a means of collecting the grades of elementary school children attending TPS or foster children who attend schools outside of the TPS system. The grades not available through the data link are collected and sent to QI by casework staff or requested by Education Monitors. Clerical staff assigned to support the Education Program enters information from submitted grade cards into the same EXCEL spreadsheet. It is a limitation of this study that not all children in foster care have grades cards submitted. The educational information of some children is not
available because they are not students of TPS and their grade cards have not been submitted to QI.

2.16 Research Questions

The study addresses the following research questions:

(1) How many and what percentage of the children face potentiating factors to their educational well-being?

(2) Are children who need, receive, and benefit from services differentiated by age and/or race?

(3) Are there differences in potentiating or compensatory factors among children based on age and/or race?

(4) Are needs, services, and benefits predicted by potentiating or compensatory factors?
Chapter 3: Methodology

3.1 Introduction

This Chapter consists of five subsections. The first has an overview of the study, including the conceptual model illustrating relationships that were explored. Second, the population of children studied is described. The third subsection deals with descriptions of the study variables. Sources of data, procedures of data collection and organization, and finally, statistical analysis are given in the fourth and fifth subsections.

3.2 Study Overview

The study is descriptive and employs an exploratory design. The population is described in terms of the three categories of variables under study. Potentiating factors and educational need/performance are described with the child characteristics of interest; race/ethnicity and age level. Next, the first three major research questions and associated minor research questions are addressed. This is done through bivariate analysis, conducted to explore relationships among variables. Finally, the fourth and final major research questions and their corresponding minor research questions are addressed through multivariate analysis. The model explores predictive relationships among child characteristics, potentiating/compensatory factors, and educational need/performance.
Table 2 contains all of the variables included in the study, how they are categorized, the number of observations available, and number of missing cases.

Table 2  Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Observations</th>
<th>Missing Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Child characteristic</td>
<td>243</td>
<td>---</td>
</tr>
<tr>
<td>Race</td>
<td>Child characteristic</td>
<td>243</td>
<td>--</td>
</tr>
<tr>
<td>Assessed educational need</td>
<td>Child characteristic</td>
<td>197</td>
<td>46</td>
</tr>
<tr>
<td>Reason for foster care entry</td>
<td>Child characteristic</td>
<td>210</td>
<td>33</td>
</tr>
<tr>
<td>Mental health status</td>
<td>Child characteristic</td>
<td>243</td>
<td>--</td>
</tr>
<tr>
<td>Placement stability</td>
<td>Compensatory factor (yes)</td>
<td>243</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Potentiating factor (no)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of time in care</td>
<td>Compensatory factor (less time)</td>
<td>243</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Potentiating factor (more time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational services (referred)</td>
<td>Compensatory factor (referred)</td>
<td>243</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Potentiating factor (not referred)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational services (units received)</td>
<td>Compensatory factor (higher number)</td>
<td>81</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Potentiating factor (lower number)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade point average (GPA)</td>
<td>Educational performance</td>
<td>142</td>
<td>101</td>
</tr>
<tr>
<td>Change in GPA</td>
<td>Educational performance</td>
<td>142</td>
<td>101</td>
</tr>
</tbody>
</table>
Using secondary, child-level data, the study explores relationships among these variables to learn about patterns of service provision and variations in benefits, particularly as these patterns relate to children of different races/ethnicities and developmental stages. As can be seen, four of the variables are limited by missing data. This problem is discussed further at the end of this Chapter in the limitations section. Figure 1 below illustrates a conceptual model for the relationships among variables.

Figure 1 Conceptual Model for Relationships among Variables
In the conceptual model, race/ethnicity, developmental stage, reason for foster care entry, mental health, and assessed educational need are the individual factors of interest. After entering the system, experiences in the system may serve as potentiating or compensatory influences. Educational performance and/or change in educational performance represent accumulation of educational human capital. This study explores these relationships with particular emphasis on whether they exist or differ with regards to the individual factors related to the child.

3.3 Study Population

According to the U.S. Census Bureau, Lucas County had an estimated population of 440,456 in 2008. It is an urban county with a depressed economy and an ethnically diverse population. The large majority of children in the sample come from urban areas and low-income families. Of the children in the custody of LCCS in 2008, 47% were White, 51% were Black and 2% were something other. More than half (54%) of children in the agency's custody in 2008 were five years old or younger, and 53% were male (Lucas County Children Services Annual Report, 2008).

The population chosen for study was all children who were five years old or older on August 1, 2008 or at entry into foster care and were in the temporary, permanent, or legal custody of LCCS. The children included for study remained in LCCS custody for eight months or more between August 1, 2008 and June 30, 2009. There were 243 children who met the criteria for study. Of these, 133 children were male and 110 were female. Consistent with the literature describing disproportionality in the child welfare system, more children were Black (132) than were White (111), although the population
of Lucas County is predominantly White. The children range in age from five to seventeen years of age with a mean age of 11.88 years. The mean length of time in foster care was 2.69 years.

During the study period, the children were in various placement types, including institutions, group homes, treatment foster care, general foster care, pre-finalized adoptive homes, and relative homes. For the purposes of this study, all of these placement types are being considered “foster care”. The reason for this is that children in the child welfare system often move between placement types, and to limit the study population to children in a specific placement type for the entire study period would have severely reduced the study population size. Instead, children whose custody status remained “LCCS custody” for the entire study period were selected. This is appropriate to the research questions under study because as custodian, LCCS was acting as “parent” to these children for the entire study period. The time period of August 1, 2008 through June 30, 2009 was chosen because it encompassed a full academic year. Lucas County had an educational support program that was considered to be fully implemented by the autumn of 2008, and sources of data were in place at a sufficient level to be informative.

3.4 Variables for Study

Advocacy groups encourage CPS to reduce or eliminate the systemic potentiating factors associated with foster care and increase services that help children make up lost ground and perform better in school. They recommend that foster children be referred to supportive services such as tutoring and mentoring. These interventions may act as short-
term or transient compensatory factors that improve cognitive and social-emotional functioning, leading to improved school performance.

Any systemic problem related to the foster care system holds significant implications for Black children due to the disproportionality known to exist within the CPS and foster care systems (Coakley, 2008). African American children are over-represented in foster care. Some studies suggest that these children do not receive the same level of services as White children (Casey Family Programs, 2004). Human capital theorists view the age or developmental stage at which investments in human capital are made as a determiner of the degree of benefit derived from the investments. For this reason, race and age were chosen as child characteristic variables of interest in this study.

Variables were chosen to allow for the exploration of the impact of child characteristics, maltreatment effects, assessment of educational human capital prior to foster care placement, systemic influences that can act as potentiating or compensatory factors while in foster care, and assessment of educational human capital at the end of the study period. The tables in this section define the variables to be studied within each category and describe how it was measured. Also discussed is the relevance of the variable to the overall analysis of the research questions.
3.4.1 Variables Describing Child Characteristics

Table 3  Child characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>How Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>Black, White</td>
</tr>
<tr>
<td>Age Group</td>
<td>5-10 yrs, 11-14 yrs, 15-18 yrs</td>
</tr>
<tr>
<td>PCSA-assessed educational need</td>
<td>Low, moderate, or high</td>
</tr>
<tr>
<td>School system-assessed educational need</td>
<td>Special education placement</td>
</tr>
<tr>
<td>Reason for foster care entry</td>
<td>Physical, sexual, or emotional abuse, or neglect; statutory or non-statutory entry reason</td>
</tr>
<tr>
<td>Mental health status</td>
<td>Presence of mental health diagnosis, type of mental health diagnosis</td>
</tr>
</tbody>
</table>

Disproportionality is an issue of major concern in child welfare as well as in the field of education (Casey Family Programs, 2004; Coakley, 2008). Minority children are disproportionately represented in foster care, and African American youth in the general population are statistically less likely to graduate from high school (Casey, 2004; Muslow & Murry, 1996). Thus, race is a salient characteristic of children in the study population. Age of the child is relevant because, according to Human Capital Theory, interventions taken when children are younger produce greater effects than when individuals are older.

Human capital theorists are interested in the developmental stages at which investments in human capital are made or not made (Wulczyn, 2008; Heckman, 2001). Prior research describing poor academic performance of foster children has largely viewed the population of foster children as one large group. Children in elementary
school are discussed with high school youth as if their characteristics and needs were the same. This study explores the variables of interest grouped by age ranges that correspond with the developmental stages of elementary school, early adolescence, and adolescence (U.S. Department of Education).

Lucas County’s educational program includes educational assessments for children who are entering foster care. A contracted provider administers a standardized educational assessment to all children entering foster care, except those who are in special education classes. The assessment results are evaluated in combination with the child’s recent grades, if they can be obtained, and social-emotional functioning as recorded in a record called the Child Characteristic Inventory (CCI). The indicators of academic and social-emotional functioning are assessed together by the provider who assigns an educational need level of low, moderate or high.

Children who are in special education classes when they enter care are not reassessed by LCCS because their educational needs have already been assessed and identified by the school system. By law, these children have individualized education plans with services to address their special needs.

Prior research suggests that different types of maltreatment impact academic performance at different levels and in different ways (Leiter & Johnsen, 1994; 1997; Kurtz, et al., 2003; Egeland, et al., 1983), however other research finds no difference. Still other research finds no difference in impact on child well-being between child victims of substantiated versus unsubstantiated reports. Prior research examining inconsistencies in the ways abuse and neglect reports are classified revealed that the lack
of reliable application of maltreatment categories renders studies based on these categorizations problematic (Dubowitz, 2008; English, 1998). For this reason, this study used a different coded reason for foster care entry. The code used is determined at the cross-departmental meeting when the decision is made that the child cannot remain safely at home. Because more options are available to the child welfare supervisor entering this code, it provides more information and may be more reliable as a reason for foster care entry than a substantiation code.

Placement in foster care is an intervention meant to provide safety and stability to children who cannot remain in their own homes. Most children enter foster care because they have been abused or neglected, and research suggests that abuse and neglect can impair or inhibit healthy cognitive and social-emotional development necessary for success in school (Christian, 2003; Burley & Halpern, 2001; Blome, 1997). As discussed in Chapter 2, researchers have found that although foster care placement removes children from dangerous and/or neglectful environments it also introduces new challenges, particularly with regard to school experiences (Advocates for Children of New York, 2000, Aron & Zweig, 2003, Zetlin, et.al., 2003). Foster children’s lives are often unstable.

Histories of abuse and neglect place children at risk for serious mental health problems (Yates, 2007; Veltman & Browne, 2001). Children in foster care are disproportionately diagnosed with serious mental health diagnoses (Casey, 2004; Trickett & McBride-Chang, 1995). Significant numbers are placed on psychotropic medications (Smithgall, 2004; 2005). It is common for foster children with social-emotional and
mental health problems to display difficult and challenging behaviors at school and at home (Smithgall, 2004; 2005). Frequently, these children are referred to counseling and other services to address their needs and behaviors (McRoy, 2003). Difficult behaviors and multiple appointments can place a strain on foster caregivers that can lead to disrupted placements and for some children, multiple moves. When children change foster placements, they often change schools as well (Casey, 2001; Smithgall, 2004).

Children with social-emotional problems stemming from histories of abuse or neglect often have difficulty adjusting to foster care, and may have their problems exacerbated by exposure to the foster care system (Linares, 2007). Whether the origins of the problems lie in a deeper chronicity or severity of their abuse or neglect experiences, prenatal vulnerabilities, or somewhere else, a cycle of instability can result. Many children with these problems remain in care longer because parents or other potentially permanent caregivers are unable to manage their behavior and meet their special needs.
3.4.2 Variables Describing Systemic Potentiating Factors

Table 4  Potentiating factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>How Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement stability</td>
<td>Stable placement during school year, y/n</td>
</tr>
<tr>
<td>Length of time in care</td>
<td>.67 years - 2 years, 2 years – 3 years, more than 3 years</td>
</tr>
<tr>
<td>Referred for services</td>
<td>Yes or no</td>
</tr>
<tr>
<td>Service hours received</td>
<td>Less than 17 hours, more than 17 hours, number of hours of service received</td>
</tr>
</tbody>
</table>

In this exploratory study, stability, length of time in foster care, and academic service provision represent foster care experiences that may be potentiating or compensatory in their effects. The methodology employed by this study does not measure profound differences in children and their foster care experiences that would be expected to mitigate the effects of a history of abuse and neglect and placement in foster care. Some of these differences believed to positively influence educational performance include a resilient nature and a strong, supportive relationship with foster parents (Flores, et al., 2005; Berk, 1994; Martin & Jackson, 2002).

Program services are those provided by external service providers with whom LCCS has contracted to provide specific services to its client systems. Besides educational assessments, LCCS has three contracted services with outcomes targeted to the improvement of educational performance; tutoring, mentoring, and alternative suspension services. Tutoring services by multiple providers at various sites and may be
group or individually provided. All of the contracted providers offering tutoring services offer other services to families as well; such as several providers that offer child mentoring (group or one-on-one). One provider offers alternative suspension services. This is an academic and therapeutic setting for children and youth who are suspended or expelled from school.

Contract services are accessed by referral. Caseworkers must fill out forms to request specific services for children on their caseloads in order for contract services to be provided. Transportation is usually the responsibility of the foster parent or caregiver. Providers bill LCCS for units of service, which translates into hours of service received by the child. If children are referred and services provided, educational support services can act as compensatory factors for children who are struggling in school.

3.4.3 Variables Describing Educational Human Capital

Table 5 Educational performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>How Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade point average</td>
<td>GPA less than 2.00</td>
</tr>
<tr>
<td></td>
<td>GPA greater than 2.00</td>
</tr>
<tr>
<td>Change in grade point average</td>
<td>GPA improved, y/n</td>
</tr>
</tbody>
</table>

The grades of foster children who attend schools in the Toledo Public School system (TPS) are requested and retrieved electronically by agreement between LCCS and the public school system. Only the grades of middle and high school children can be obtained in this way because TPS does not electronically store the grades of elementary
school children. Collecting grade cards for children in elementary school or who attend other school systems is the responsibility of the child’s caseworker.

There were 164 children with grades in the LCCS database for the 2008 -2009 academic year. Of those, 142 had two or more quarters with grades. Only the grades of these children were included in the analysis. Change in grade point average was calculated by subtracting the grade point average for the first available quarter from that of the last available quarter.

Because educational performance data is not available for every child in the study, the population for the educational performance variables was a subpopulation within the study. Grades provide concrete indicators of academic engagement, progress, and behavioral functioning. Cumulative grade point average (GPA) forms the basis for developing educational human capital in that they represent positive functioning for areas that increase the likelihood of positive adult outcomes, including employment and self-sufficiency.

3.5 Sources of Data and Methods of Data Collection

The dataset utilized for this study is secondary, child-level data. No new data was collected for the purpose of this study. There were three major sources of data: SACWIS (the statewide information database used in Ohio child welfare agencies), the LCCS Education Program’s internal database, and LCCS internal MIS data. Variables for the study were located in ACCESS or EXCEL spreadsheets and downloaded into the researcher’s computer at the PCSA site. Extraneous data not relevant to the study was
deleted, but identifying data that might be common to other spreadsheets was retained.

Figure 2 illustrates the sources of data and how it was stored.

![Diagram showing sources of data]

Data were merged into EXCEL by client ID then downloaded into SPSS

Figure 2  Sources of Data
3.5.1 State Child Welfare Database

In Ohio, all Public Children Service Agencies (PCSA’s) are connected to the Statewide Automated Child Welfare Information System (SACWIS). The SACWIS system was implemented as a means of standardizing the collection of information about child welfare cases and case-related activities, increasing accountability, and allowing for the aggregation of data across the state. SACWIS also facilitates the sharing of case-related information across counties.

Each county must input information about all state-mandated activities into the SACWIS system. Information in SACWIS includes demographic, maltreatment, placement, and custody histories, and case plan services. Caseworkers enter most data directly into SACWIS, although in Lucas County, information about placements, custodies, and court activities is entered by data processing staff.

The State of Ohio began phasing county PCSA’s into SACWIS in 2007. Lucas County was one of the last counties to “go live” on the system in July of 2008. Prior to implementing SACWIS in Lucas County, all historical information that had been in the agency’s county-level system was transferred into SACWIS. There have been problems with the SACWIS system and concerns raised about the reliability of data, and the State of Ohio continues to work on these issues. This is a limitation to the current study.
3.5.2 Study Data obtained from SACWIS

Management Information Systems (MIS) staff at the PCSA is authorized to download data from SACWIS into ACCESS spreadsheets, where it is stored for the agency's use. After obtaining permission from the PCSA Executive Director to use the data, and approval from The Ohio State University Institutional Review Board, a request was made for the administrative data needed that was stored in SACWIS. Time frames, parameters, and specific populations for each of the variables needed were provided to the LCCS Data Analyst, who extracted the data. "Code sheets" that identified the meanings of all letter and number codes used in the spreadsheets were also provided. To ensure common understanding of the data being requested, the researcher met with the Data Analyst, observed the data pull, and clarified any questions about the data requested as it was being downloaded into ACCESS. During this time, the researcher also validated with the Data Analyst an accurate understanding of the meaning of each variable as well as any limitations and validity concerns related to the data.

3.5.3 The Education Program Database

This education program is a Lucas County Initiative, funded by local tax dollars. It is unique among Ohio counties and its activities are not specifically mandated by state or federal law, therefore data related to the program is not included in SACWIS. Since 2005, staff assigned to the education program have been collecting data related to program services and outcomes in an Education Database in a secure location within the agency’s computer system. Data about educational services provided and educational
performance are stored in Excel spreadsheets and tracking sheets for educational progress monitoring are stored in ACCESS.

Two spreadsheets within the Education Program database were used, one with information about children to whom educational incentives were provided and the other with school and grade information for children in the PCSA’s custody.

Children who are doing well in school or have shown significant improvement are given educational incentives. Children who receive incentives and the type of incentive given is tracked by academic year and grading period, and is stored in an ACCESS table.

By Memorandum of Understanding (MOU), educational data for children in the agency’s custody is provided to the agency by the Toledo Public Schools (TPS). Information includes all classes taken and letter grades for each class. For children not attending TPS, caseworkers request grade cards and submit a copy to the Quality Improvement Division. Clerical staff manually enter the information, from submitted grade cards, into the Excel spreadsheet which contains the educational data.

3.5.4 Agency Administrative Data

Two spreadsheets with internal data entered and stored within the PCSA were used. The first, managed by the PCSA Contract Department staff, collects information about contract services provided to all families and children served by the agency. The other is managed by the PCSA Clinic staff to collect and store information about children in the PCSA’s care and custody who are on psychotropic medications.
3.5.5 The Contract Department Database

Services examined in this study are contracted services. These include educational assessments, child mentoring, alternative suspension services, and tutoring services. The contracted provider service, billing, and payment information is recorded in a Contract Department database thus providing details concerning the children referred for contract services and, if served, the number of service hours and corresponding amount for which the agency was billed and subsequently paid.

Records for contract services provided are stored and can be accessed through the PCSA's internal MIS system. After meeting with the Manager of Contract Services about the data needed for this study, the researcher followed her direction on how to find and download the data, filtering it for the key parameters. The data was downloaded into a separate EXCEL spreadsheet with client names deleted, leaving the client identification numbers to be used as the unique identifier.

3.5.6 The Clinic Database

When children are in the care and custody of a PCSA, the agency is responsible for ensuring that they receive the medical and dental care that they need. This includes being aware of, documenting, and managing any special needs, particularly those involving medication. At LCCS, this function is the responsibility of the nurses and clerical staff of the in-house clinic. If psychotropic drugs are prescribed for a child in foster care as a result of an assessment by a qualified medical professional, the PCSA Executive Director must give written consent before those drugs can be administered.
The PCSA Associate Director responsible for both the Contract and Clinic Departments was contacted and asked directly whether and where information about the mental health diagnoses of children in foster care would be stored. The researcher was told that this is collected by the clinic staff along with psychotropic medication tracking and was directed to the clinic clerical staff-person who enters the information. There, instructions were provided as to how to where to locate the ACCESS table. It was filtered then for the study population. Mental health data for the study population was then downloaded into an EXCEL spreadsheet.

3.5.7 Method of Data Organization

All of the data used was existing data that pertained to and was accessed through the PCSA. Copies of the four existing spreadsheets from the three separate locations were downloaded into EXCEL, visually examined for missing data and data entry errors, and then merged into the base (SACWIS) spreadsheet using the unique identifier of client ID. The spreadsheet containing data extracted from SACWIS by the PCSA Data Analyst was utilized as the main database, since this spreadsheet held the population universe within all of the study parameters and had no missing data. This spreadsheet was also deemed the least vulnerable to data entry error.

One by one, the other EXCEL spreadsheets were merged with the base by matching client ID’s. Where there were missing client ID’s, a problem that only occurred with the Program Database which held grade data and information about assessed educational need, data were merged by matching children’s names with the universe spreadsheet. Then the missing client ID’s were looked up manually in the PCSA system
by the child’s name and entered into the master spreadsheet. At this point, spreadsheets were not de-identified so as other spreadsheets were merged with the base, spot-checks were made to compare data that was common to both spreadsheets, such as name, date of birth, race, and gender, to ensure the accuracy of the data. When all of the spreadsheets were merged into one and the data was as complete as possible, all names and any other identifying information were deleted. This was downloaded into SPSS and from that point on only de-identified data was used.

3.6 Data Analysis

The study begins with descriptive statistics that answer the following research question:

(1) How many and what percentage of the children face potentiating factors to their educational well-being?

In answering the above questions, frequencies and percentages are provided for categorical variables.

3.6.1 Bivariate Analysis

Correlations were explored among the variables to search for statistically significant relationships in accord with the following major research questions:

(1) Are children who, need, receive, or benefit from services differentiated by age and/or race?

(2) Are there differences in potentiating or compensatory factors among children based on age and/or race?
Frequencies and percentages are descriptive statistics that are appropriate for nominal and ordinal variables. Chi square is a reasonable test to describe relationships among nominal and ordinal variables because it can show significance between frequencies rather than between mean scores. Since the population of children in foster care often perform worse academically, have more suspensions, and have more unexcused absences from school than the general population, it would not be expected that these variables would be normally distributed within this study population. Chi square does not assume normality and thus fits the data.

The dichotomous dependent variable, “services received, yes/no” was used in the analysis to address the second major research question, “Who receives services?” Again, chi square was used. In order to include them in the analysis, two continuous variables (“length of time in care” and “GPA”) were re-coded into categorical variables. The variable “length of time in care” was transformed to:

- Less than one year = 0
- One year to 1.999 years = 1
- Two years to 2.999 years = 2
- Three years to 3.999 years = 3
- Four years to 4.999 years = 4
- Five years or longer = 5.

The continuous variable “GPA” was transformed to:

- 0 to .999 = 0
- 1.00 to 1.999 = 1
• 2.00 to 2.999 = 2
• 3.00 to 3.999 = 3.

3.6.2 Multivariate Analysis

Finally, multivariate methods were employed to determine if measures of human capital accumulation can be predicted by salient child characteristics, potentiating, and compensatory factors. Because the purpose of the analysis is prediction, regression techniques address the major research question below:

(1) Are needs, services, and benefits predicted by potentiating or compensatory factors?

The questions have categorical dependent variables therefore logistic regression is the appropriate test. Logistic regression carries few assumptions so normality was not required.

3.7 Limitations

There are limitations associated with this study. Lucas County was connected to the Statewide Automated Child Welfare Information System (SACWIS) in July of 2008. SACWIS is a new system that links all eighty-eight Ohio PCSA’s, and there have been concerns raised about its reliability. Other data for this study is stored at LCCS, but is entered into multiple spreadsheets and databases by several different agency staffers. Information about educational support services that are not provided through contract with the agency is supplied by caseworkers and may not be accurate in all cases. Academic performance data is not supplied for every child in foster care. If a child’s grades are not in the program database and caseworkers do not submit the grade cards,
the child’s academic information could not be used for analysis. Children who do not have grades submitted may be different than those who do in ways that impact the reliability of any statistical findings. Other identified limitations are listed below:

1. It is estimated that 50%-60% of foster children in LCCS custody attend the Toledo Public School system (TPS). The TPS system is an urban school system that fluctuates between the lower and mid-ranges of performance. Statewide educational data is for all schools, not just public. Private and high performing schools may have a positive effect on the measures.

2. Because of missing data and the types of variables available for use, it is possible that some of the measures were not sufficiently sensitive to the program effects.

3. There is a significant amount of missing data for some critical variables, particularly grade data.

4. The study does not account for other factors that may point to other likely explanations for the differences observed. These include, most obviously, variations in the substitute care environment and the quality of the relationships that exist between children and important adults in their lives.

3.8 Conclusion

This study in Lucas County, Ohio adds to the current knowledge about county-based interventions to improve the educational performance of foster children. The study takes advantage of the unique availability of data about service provision and academic performance available from one county-based child protection agency.
Chapter 4: Results

The demographics of the population of children included in this study are followed by a presentation of bivariate and multivariate findings. The descriptive statistics are a summary of what is known about the characteristics, potentiating/compensatory factors, service provision, and human capital of the children investigated. Frequencies and percentages are provided for categorical variables as well as the shapes of the distributions of each. This preliminary examination of the variables helps to set the stage for the deeper analysis to follow.

The statistical significance of relationships between the variables as they relate to race/ethnicity and age group is explored through bivariate or correlation analysis in section 4.2. Included are the need for educational support services, referral to and receipt of services and measures of academic performance. Chi square tests were used to determine whether or not the relationships differ significantly from what would be expected if no relationship between the variables existed. Continuous variables were converted to categorical or ordinal variables to meet the assumptions for chi square.

Multivariate statistics are displayed in Section 4.3. Regression analysis was employed to test the predictive ability of the conceptual model introduced in Chapter 3. Logistic regression techniques were used to explore the degree of the relationships between the variables and as predictors of the dependent variables. This preliminary look
at relationships between program interventions and program objectives has been conducted without accounting for extraneous variables. The purpose is to explore these relationships so that a foundation can begin to be built that would support more rigorous designs.

4.1 Descriptive Statistics

The full population studied is comprised of 243 children who were five years or older and in the temporary, legal, or permanent custody of the State and who entered care prior to 10/30/08 and remained in care for a minimum of eight months during the study period 8/1/08 to 6/30/09. All of the children were placed in out-of-home care, either with a relative (kinship) or in licensed foster care. The term “foster care” refers to all placement settings for children in the custody of the State. All of the children in the study are considered to be “foster children”.

Figure 3 shows the ages of the children in the study on 8/1/08 (if they entered care prior to 8/1/08) or on the day they entered care (if they entered between 8/1/08 and 10/31/08). Ages ranged from 5.00 to 17.99 years, with the smallest representation of children being in the middle range of 9 to 12 years old (S.D. 3.981).
Figure 3  Ages of Children (N = 243)

4.1.2 Comparisons with National Data by Age

An age comparison of the study population with children in foster care nationally on 9/1/04 (DHHS, 2009) is shown in Table 6. As expected, children in the study sample are older and the population has a positive skew. This is consistent with research indicating that older children remain in care for longer periods of time than younger children (Pew Research Center, 2009).

Table 6 Age Distribution of Children Studied and in Foster Care Nationally on 9/1/04

<table>
<thead>
<tr>
<th></th>
<th>Study Population 5 to 18 years old</th>
<th>United States 5 to 18 yrs old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>12.39 yrs</td>
<td>11.94 yrs</td>
</tr>
<tr>
<td>Median</td>
<td>13.47 yrs</td>
<td>11.82 yrs</td>
</tr>
</tbody>
</table>
4.1.3 Age Groupings

Children were classified as belonging to Age Group 1 (5 to 10 years old), Age Group 2 (11 to 14 years old), and Age Group 3 (15 to 18 years old). The groupings were chosen to correspond with the three main educational phases of elementary, middle, and high school. Figure 4 displays the typical ages of children in each grade at the end of the academic year whereas the study age is captured at the beginning of the academic year.

<table>
<thead>
<tr>
<th>Level/Grade</th>
<th>Typical age (at end of the school year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td></td>
</tr>
<tr>
<td>1st Grade</td>
<td>6–7</td>
</tr>
<tr>
<td>2nd Grade</td>
<td>7–8</td>
</tr>
<tr>
<td>3rd Grade</td>
<td>8–9</td>
</tr>
<tr>
<td>4th Grade</td>
<td>9–10</td>
</tr>
<tr>
<td>5th Grade</td>
<td>10–11</td>
</tr>
<tr>
<td>Middle School</td>
<td></td>
</tr>
<tr>
<td>6th Grade</td>
<td>11–12</td>
</tr>
<tr>
<td>7th Grade</td>
<td>12–13</td>
</tr>
<tr>
<td>8th Grade</td>
<td>13–14</td>
</tr>
<tr>
<td>High school</td>
<td></td>
</tr>
<tr>
<td>9th Grade (Freshman)</td>
<td>14–15</td>
</tr>
<tr>
<td>10th Grade (Sophomore)</td>
<td>15–16</td>
</tr>
<tr>
<td>11th Grade (Junior)</td>
<td>16–17</td>
</tr>
<tr>
<td>12th Grade (Senior)</td>
<td>17–18</td>
</tr>
</tbody>
</table>

(U.S. Department of Education)

Figure 4 Grade Levels and Typical Age
4.1.4 Race/Ethnicity

As a percentage of their populations, children of racial minorities are overrepresented in the foster care system (Derezotes, Poertner, & Testa, 2005). The racial makeup of the study sample is consistent in that regard. There were 132 Black children (54%) and 111 White children (46%) in the final convenience sample. The population of Lucas County, Ohio is 78.3% White, 18.1% Black, 5.5% Hispanic or Latino, 1.5% Asian, and 0.3% American Indian or Alaska Native (U.S. Census Bureau, 2008 estimates). All of the children in the final study sample were either Black or White.

Not yet well understood are the dynamics of this disproportionality and the degree to which racial minorities are impacted by educational barriers that may be associated with status as a foster child. Race was included in this study to explore avenues for future research in this area.

Descriptive characteristics including frequency, measures of central tendency, and variability of the children are displayed in Table 7. There are 77 children in Age Group 1, (elementary school); 57 children in Age Group 2 (middle school); and 94 children in Age Group 3 (high school). More White children are in the youngest group while more Black children are in the two older groups. Black children also have a slightly higher mean age in Age Groups 2 and 3 ($m = 13.32, 16.34$) than do White children ($m = 13.16, 16.31$).
Table 7  Scale Distribution of Ages and Race

<table>
<thead>
<tr>
<th>Age Group and Race</th>
<th>n</th>
<th>%</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Group 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>40</td>
<td>37.9</td>
<td>7.30</td>
<td>1.52</td>
</tr>
<tr>
<td>White</td>
<td>52</td>
<td></td>
<td>7.27</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>92</td>
<td>37.9</td>
<td>7.28</td>
<td>1.63</td>
</tr>
<tr>
<td>Age Group 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>36</td>
<td>23.5</td>
<td>13.32</td>
<td>1.17</td>
</tr>
<tr>
<td>White</td>
<td>21</td>
<td></td>
<td>13.16</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>23.5</td>
<td>13.26</td>
<td>1.13</td>
</tr>
<tr>
<td>Age Group 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>56</td>
<td>38.7</td>
<td>16.34</td>
<td>0.80</td>
</tr>
<tr>
<td>White</td>
<td>38</td>
<td></td>
<td>16.31</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>94</td>
<td>38.7</td>
<td>16.33</td>
<td>0.79</td>
</tr>
</tbody>
</table>

4.1.5 Reason for Foster Care Entry

The reasons that children enter foster care are many, not all directly related to an incident of abuse or neglect, and can indicate prior problems in the child’s social-emotional functioning. Parents, adoptive parents, kinship, or other caregivers may become overwhelmed or may be unable to cope with unruly or other challenging behavior the child is exhibiting. A coded element, extracted from Ohio’s child welfare database was used to identify the primary reason for entry.
Of the 243 children in the sample, 90 (37%) entered care due to neglect, 37 (15%) due to physical abuse, 7 each (3%) due to sexual and emotional abuse, and 72 (30%) for other reasons. Table 8 delineates the reasons that children entered care and shows the percentage of children in each age and racial group that entered care for each category. Neglect was the reason for foster care entry for 44% of White children and 31% of Black children. A higher percentage of White children entered care due to physical abuse (11.7%) than that of Black children (5.3%). The reason for entry into care was unknown for 30 children. These cases are shown in Table 8 as “other”, but were deleted from further analysis.
<table>
<thead>
<tr>
<th>Reason (Percentages) for Foster Care Entry by Age Group and Race/Ethnicity</th>
<th>Age Group 1</th>
<th>Age Group 2</th>
<th>Age Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black (n = 40)</td>
<td>White (n = 52)</td>
<td>Black (n = 36)</td>
<td>White (n = 21)</td>
</tr>
<tr>
<td><strong>Primary maltreatment categories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neglect</td>
<td>40.0</td>
<td>46.0</td>
<td>30.6</td>
<td>47.6</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>2.5</td>
<td>5.8</td>
<td>11.1</td>
<td>9.5</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>9.6</td>
<td>3.6</td>
<td>3.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Emotional Maltreatment</td>
<td>7.5</td>
<td>3.8</td>
<td>4.8</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Other entry reasons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependency</td>
<td>10.0</td>
<td>11.5</td>
<td>11.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Drug/Alcohol Abuse</td>
<td>17.5</td>
<td>1.9</td>
<td>8.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Caregiver Inability to Cope</td>
<td>5.0</td>
<td>3.8</td>
<td>14.3</td>
<td>8.9</td>
</tr>
<tr>
<td>Delinquency/Unruly</td>
<td>5.6</td>
<td>4.8</td>
<td>7.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Child Behavior Problems</td>
<td>7.9</td>
<td>0.0</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Relinquishment</td>
<td>3.6</td>
<td>1.5</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Inadequate Housing</td>
<td>3.6</td>
<td>1.5</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Child Disability</td>
<td>4.8</td>
<td>0.0</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Death of Parent</td>
<td>2.8</td>
<td>0.1</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>17.5</td>
<td>17.3</td>
<td>19.4</td>
<td>9.5</td>
</tr>
</tbody>
</table>
4.1.6 Assessed educational need

Assessed educational need is a combined measure derived from two sources: assessment by LCCS and assessment by the school system. LCCS assesses children entering foster care using the Norris Educational Achievement Test (NEAT) unless the child is already enrolled in special education classes, thereby having had prior assessment by their school system and been deemed to be in need of a specialized educational setting or individualized instruction. The three levels of assessed educational need are described below:

(1) Low educational need (NEAT assessment): Low need children are those who are doing well in school and are not in need of immediate intervention or support. There are no concerns for social-emotional functioning, mental health, or physical conditions that could interfere significantly with educational performance.

(2) Moderate educational need (NEAT assessment): Moderate need children may require support to prevent deterioration of their academic progress. The assessment includes recommendations for intervention that may be targeted to improve academic, social-emotional, or physical functioning that interferes with educational progress.

(3) High need (NEAT assessment): Children with high academic needs require immediate support, monitoring, and intervention in order to prevent academic failure.
(4) High need (determined by school system): These children have been provided a multi-factored assessment by educational professionals in their school with a resulting determination as to having special educational needs. In order for the school system to make this determination the child must meet criteria for a recognized disability that interferes with his or her ability to learn. In other words, there must be a discernable discrepancy between the child’s cognitive ability and his or her tested performance (U.S Department of Education, 2009).

The assessed educational needs of children included in the study are shown in Table 9. Of the 92 children in the 5 – 10 year old group, there was a high percentage of missing data (33.7%) with 22 White and 9 Black children not being assessed. The large racial disparity in the 5 – 10 year old children assessed makes other observations about trends here problematic. This disparity is not seen in the other two age groups.

The children in the 11 – 14 year old group (Age Group 2) appear to show a trend toward higher educational need for both Black and White children. A majority of children in Age Group 2 have high educational needs. Overall, more than half of the children in this group are in special education classes. High percentages of both White and Black children are in special education, although the percentage of Black children in this group (55.6%) surpasses that of White children (42.9%). The trend toward high educational needs (either in special education or child welfare-assessed as high need) continues with the group of children in the 15 – 18 year old group (Age Group 3). The percentage of Black children with high educational needs increased from 50% (5 – 10
year olds) to 58.4% (11 to 14 year olds) to 67.8% (15 – 18 year olds). The percentage of White children with high educational needs (special education or high need) rose from 42.3% (5 – 10 year olds) to 57.2% (11 – 14 year olds) to 57.9% (15 – 18 year olds). Therefore the White children did not show the same dramatic rise in high educational needs corresponding with older age as did the Black children.

Overall, nearly one third of the children (n = 88) were in special education classes. Black children were over-represented in the special education category. A review of agency records found that special education categories were commonly related to a behavioral disability as opposed to a cognitive disability. In fact, of the 88 sample children in special education, 58% (n = 51) were listed in case records as having a severe emotional disturbance (SED) as the qualifying disability for special education placement.
Table 9 Assessed Educational Need by Age Group and Race/Ethnicity (n =243)

<table>
<thead>
<tr>
<th></th>
<th>Special Education n = 88</th>
<th>High Need n = 47</th>
<th>Moderate Need n = 33</th>
<th>Low Need n = 29</th>
<th>Missing Need n = 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>5 – 10 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>40</td>
<td>8 (20.0)</td>
<td>6 (15.0)</td>
<td>12 (30.0)</td>
<td>9 (22.5)</td>
</tr>
<tr>
<td>White</td>
<td>52</td>
<td>9 (17.3)</td>
<td>3 (05.8)</td>
<td>13 (25.0)</td>
<td>22 (42.3)</td>
</tr>
<tr>
<td>11 – 14 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>36</td>
<td>20 (55.6)</td>
<td>6 (16.7)</td>
<td>1 (02.8)</td>
<td>3 (08.3)</td>
</tr>
<tr>
<td>White</td>
<td>21</td>
<td>9 (42.9)</td>
<td>5 (23.8)</td>
<td>3 (14.3)</td>
<td>2 (09.5)</td>
</tr>
<tr>
<td>15 – 18 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>56</td>
<td>26 (46.4)</td>
<td>3 (05.4)</td>
<td>12 (21.4)</td>
<td>6 (10.7)</td>
</tr>
<tr>
<td>White</td>
<td>38</td>
<td>16 (42.1)</td>
<td>6 (15.8)</td>
<td>6 (15.8)</td>
<td>4 (10.5)</td>
</tr>
</tbody>
</table>

Table 10 shows the educational need levels of the children who entered foster care due to physical, sexual, or emotional abuse, or neglect. The most notable finding is that half of the neglected children were in special education classes.
Table 10 Assessed Educational Need by Primary Maltreatment Type (n =95)

<table>
<thead>
<tr>
<th>Assessed Educational Need</th>
<th>Maltreatment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical Abuse</td>
</tr>
<tr>
<td>Low need</td>
<td>4</td>
</tr>
<tr>
<td>Moderate need</td>
<td>5</td>
</tr>
<tr>
<td>High need</td>
<td>3</td>
</tr>
<tr>
<td>Special education</td>
<td>7</td>
</tr>
</tbody>
</table>

Of the 243 children in the samples, 46 (shown as “Missing Need” in Table 9) were not included in the special education database and did not have an assessed educational need level listed. The CPS records of all 46 children were manually reviewed to determine the reasons they were not assessed and are listed in Table 11.
Figure 5 shows that the numbers of children in each assessed need category are similar for Black and White children, except for the area of special education, where the disparity becomes larger. Overall, the highest numbers of children are in special education, considered the highest need category. “High Need” and “Special Education” categories are combined into “High Educational Need” and “Not Assessed” were deleted from the bivariate and multivariate analysis described later.
4.1.7 Mental Health

Many different mental health diagnoses were represented in the study sample. It is common for children to have several diagnoses. Some of the categories describe symptoms rather than clinical diagnoses but are included because they shed light on the mental well-being of children in the study.

Table 12 contains the mental health of children studied, broken down by age group and race/ethnicity. Findings corroborate prior research of problems with emotional dysregulation, impulsivity, and attachment among maltreated children (Yates, 2007). The most common mental health diagnoses were Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD). Ninety-three children or 38% of the 243 children in the study population had one of these diagnoses. Other diagnoses include depressive, behavioral, and anxiety disorders. Several children had developmental
disabilities or negative developmental effects related to prenatal drug or alcohol exposure. Three children had other diagnoses. One child had a seizure disorder and another was diagnosed with Static Encephalopathy (permanent brain damage commonly caused by prenatal alcohol exposure). A third child was diagnosed with Trichotillomania, an impulse disorder characterized by pulling or twisting of the hair until it falls out.

Also listed in the children’s mental health records were relevant behavioral manifestations related to their diagnoses, included in Table 12 as “Other”. The following emotional/behavioral descriptions are included: registered sexual offender (1), suicidal ideation (1), self-mutilation (1), and severe aggressive/self-injurious (1).
Table 12  Mental Health Diagnosis by Age Group and Race/Ethnicity (n= 140)

<table>
<thead>
<tr>
<th>Mental Health Diagnosis</th>
<th>Age Group 1 5 – 10 yrs</th>
<th>Age Group 2 11 - 14 yrs</th>
<th>Age Group 3 15 – 18 yrs</th>
<th>Black %</th>
<th>White %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD/ADHD</td>
<td>38</td>
<td>26</td>
<td>29</td>
<td>52</td>
<td>41</td>
</tr>
<tr>
<td>Depression</td>
<td>3</td>
<td>7</td>
<td>30</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>PTSD</td>
<td>7</td>
<td>9</td>
<td>17</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>ODD</td>
<td>4</td>
<td>12</td>
<td>10</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Emotional Disorders</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Bipolar</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Developmental Disabilities</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Adjustment Disorder</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Conduct Disorder</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Prenatal Exposure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Continued
Table 12  continued

<table>
<thead>
<tr>
<th>Mental Health Diagnosis</th>
<th>Age Group</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age Group 1</td>
<td>Age Group 2</td>
</tr>
<tr>
<td></td>
<td>5 – 10 yrs</td>
<td>11 - 14 yrs</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Disorders</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>$n = 3$</td>
<td></td>
</tr>
<tr>
<td>Intermittent Explosive</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Disorder</td>
<td>$n = 2$</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>$n = 7$</td>
<td></td>
</tr>
</tbody>
</table>

Presence or absence of a mental health diagnosis was first used in bivariate and multivariate analysis as a dichotomous variable (yes/no). Table 13 shows presence or absence of a mental health diagnosis by race/ethnicity of the child. One hundred and forty (57.6%) of the 243 children in the study sample had one or more mental health diagnoses. Of these, 77 children were Black and 63 were White. There were 140 Black
children and 103 White children in the study sample. More than half of the Black children (58.3%) and more than half of the White children (56.8%) had at least one mental health diagnosis.

Table 13 Presence or Absence of Mental Health Diagnosis by Race (N= 243)

<table>
<thead>
<tr>
<th></th>
<th>n (% Total)</th>
<th>Black (% Total)</th>
<th>White (% Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>140 (57.6)</td>
<td>77 (58.3)</td>
<td>63 (56.8)</td>
</tr>
<tr>
<td>No</td>
<td>103 (42.3)</td>
<td>55 (41.7)</td>
<td>48 (43.2)</td>
</tr>
</tbody>
</table>

Table 14 shows the presence or absence of mental health diagnosis by age group. Although half of the children in Age Group 1 (ages 5 – 10 years) had mental health diagnoses, the percentage of younger children with mental health diagnoses was lower than for the older groups.

Table 14 Presence of a Mental Health Diagnosis by Age Group (n = 243)

<table>
<thead>
<tr>
<th></th>
<th>5 – 10 yrs n =92</th>
<th>11 – 14 yrs n = 57</th>
<th>15 – 17 yrs n = 94</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>46 (50)</td>
<td>36 (63)</td>
<td>58 (62)</td>
</tr>
<tr>
<td>No</td>
<td>46 (50)</td>
<td>21 (37)</td>
<td>103 (42)</td>
</tr>
</tbody>
</table>
Next, mental health was further explored by categorizing the mental health disorders described in Table 13 according to the Diagnostic and Statistical Manual, 4th Edition (DSM-IV), if the disorder had an observed frequency greater than 5. The categories explored are described below and illustrated by prevalence in age group and race/ethnicity in Table 15.

1. Attention deficit and disruptive behavior disorders
   - Attention deficit disorder (ADD)
   - Attention deficit hyperactivity disorder (ADHD)
   - Conduct disorder (CD)
   - Oppositional defiant disorder (ODD)
   - Disruptive behavior disorder

2. Mood disorders
   - Depression
   - Dysthemia
   - Bipolar disorder
   - Mood disorder

3. Anxiety disorders
   - Post-traumatic stress disorder (PTSD)
   - Anxiety disorder

4. Adjustment disorders
   - Adjustment disorder with mixed disturbance of emotions and conduct
- Adjustment disorder with mixed mood
- Adjustment disorder with disturbance of conduct

Other disorders commonly diagnosed in childhood
- Reactive attachment disorder (RAD)
- Selective mutism

Table 1 displays the numbers and percentages of children in each race and age group diagnosed with a disorder in the five DSM-IV groupings. The table shows that of the 140 children with a diagnosed mental health disorder, 102 (73%) have an attention deficit or disruptive behavioral disorder, 58 (41%) have a mood disorder, and 38 (27%) have an anxiety disorder. Adjustment disorders and the group of disorders commonly diagnosed in childhood were less common.

Attention deficit/disruptive behavior disorders were among the diagnoses for 40 (87%) of the children in the 5 to 10 year old group. Of children in this, the youngest group, 91% of Black children and 87% of White children diagnosed with one of these disorders. The prevalence decreased slightly for the children in the 11 to 14 year old group, however partially due to the disparity in the numbers of Black and White children in the middle age group diagnoses with a mental health disorder, many more Black children in this group have one of these diagnoses (21 Black children versus 8 White children).

Table 15 shows that disparities in some of the mental health groupings begin to become visible among the age groups as well as among racial groups within the age groups. Most notable is the increased frequency of mood and anxiety disorders seen in
age groups 2 and 3. Black children appear to be particularly affected by an increase in mood disorders. Of Black children diagnosed with a mental health disorder, 48% of children in group 2 and 83% of children in group 3 have a mood disorder, versus 27% of White children in group 2 and 43% of White children in group 3.

Table 15  DSM-IV Category of Mental Health Diagnosis by Age Group and Race/Ethnicity (n = 140)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>ADD/Mood</th>
<th>Anxiety</th>
<th>Adjustment</th>
<th>Diagnosed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disorders</td>
<td>Disorders</td>
<td>Disorders</td>
<td>in Childhood</td>
</tr>
<tr>
<td></td>
<td>n = 102</td>
<td>n = 58</td>
<td>n = 38</td>
<td>n = 9</td>
</tr>
<tr>
<td>5 – 10 yrs</td>
<td>46 (87)</td>
<td>6 (13)</td>
<td>8 (17)</td>
<td>6 (13)</td>
</tr>
<tr>
<td>Black</td>
<td>22 (91)</td>
<td>3 (14)</td>
<td>2 (9)</td>
<td>3 (14)</td>
</tr>
<tr>
<td>White</td>
<td>24 (87)</td>
<td>3 (13)</td>
<td>6 (25)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>11 – 14 yrs</td>
<td>36 (81)</td>
<td>15 (42)</td>
<td>11 (31)</td>
<td>1 (3)</td>
</tr>
<tr>
<td>Black</td>
<td>25 (84)</td>
<td>12 (48)</td>
<td>8 (32)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>White</td>
<td>11 (73)</td>
<td>3 (27)</td>
<td>3 (27)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>15 – 18 yrs</td>
<td>58 (57)</td>
<td>37 (64)</td>
<td>19 (33)</td>
<td>5 (9)</td>
</tr>
<tr>
<td>Black</td>
<td>30 (57)</td>
<td>25 (83)</td>
<td>13 (43)</td>
<td>2 (7)</td>
</tr>
<tr>
<td>White</td>
<td>28 (57)</td>
<td>12 (43)</td>
<td>6 (21)</td>
<td>3 (11)</td>
</tr>
</tbody>
</table>

Note: Numbers in each disorder add up to more than 140 because many children have multiple diagnoses.
Further analysis displayed in Table 15 showed that differences in the type of mental health diagnosis between younger and older groups of children and between racial groups begin to become evident. Black children in age groups 2 and 3 were diagnosed with mood and/or anxiety disorders in greater numbers and percentages than were White children. This is in contrast to age group 1, in which more White children than Black children were diagnosed with an anxiety disorder. Rates of mood disorder diagnoses did not differ for Black and White children in age group 1.

Figure 6 illustrates the percentage of children in each age group with a mental health diagnosis and the overall percentage in each group by race/ethnicity. Age Group 2 appears to show a different pattern than the other two groups in that a much higher percentage of Black children are diagnosed with mental health disabilities than White children. Overall, the percentage of children with diagnosed mental health disabilities is 50% for the youngest children and increases for the older children to 63% and 62%, respectively.
Children enter foster care having experienced varying types and degrees of maltreatment. Once in care their experiences can compound or mitigate the impact of maltreatment on the development of human capital (Wulczyn, 2008). Three variables related to social-emotional well-being and foster care experience were explored. These variables (placement stability, length of time in foster care, and service provision) have been identified in previous research as supportive (*compensatory factors*) or challengers (*potentiating factors*), to educational success for children in foster care.
4.1.8.1 Placement stability

Smithgall, et al. (2004) found placement changes to be highly correlated with school changes. Reliable data about the number of school changes children in foster care experience in an academic year is not routinely collected, so Smithgall used placement stability as a proxy for school stability.

Stability is used as a dichotomous variable (yes/no) in this study due to the small sample size; the number of placements during the academic year ranged from one to eight. The majority of children (n = 124) had one placement during the study period. Of those children who had a placement change during the school year (not stable) 77 had two, 28 had three, 11 had four, 2 had five and 1 had eight.

The stability of the children by age group is shown in Table 16. Slightly more than half (51%) of the children in this study remained stable during the school year while the other half (49%) had at least two placements during the year and were likely to have changed schools. Statistics gathered by the federal government, as reported in a Fact Sheet published by the National Working Group for Foster Care and Education (2008), show that the average child in out-of-home care has one to two placements per year. When examined by age group, school instability was a likely potentiating factor for 44.73% of the 15 to 18 year old youth, 48.9% of 5 to 10 year olds and 56.1% of 11 to 14 year old children. Only children in the 11 to 14 year old group showed a higher percentage of instability versus stability.
Table 16  Stability by Age Group (N = 243)

<table>
<thead>
<tr>
<th></th>
<th>Stable</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td></td>
</tr>
<tr>
<td>Age Group 1 5 – 10 yrs</td>
<td>47(51.1)</td>
<td>45(48.9)</td>
<td>92</td>
</tr>
<tr>
<td>Age Group 2 11 – 14 yrs</td>
<td>25(43.9)</td>
<td>32(56.1)</td>
<td>57</td>
</tr>
<tr>
<td>Age Group 3 15 – 18 yrs</td>
<td>52(55.3)</td>
<td>42(44.7)</td>
<td>94</td>
</tr>
</tbody>
</table>

When stability was examined by race of the child (Table 17) Black and White children were found to have had similar percentages of instability. Black children were unstable at a rate of 48.5%, and 49.5% of White children were unstable for the entire academic year.
Table 17 Stability by Race/Ethnicity (n = 243)

<table>
<thead>
<tr>
<th>Stable in Placement for Full Academic Year</th>
<th>Yes n(%)</th>
<th>No n(%)</th>
<th>Total in Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>68 (51.5)</td>
<td>64 (48.5)</td>
<td>132</td>
</tr>
<tr>
<td>White</td>
<td>56 (50.5)</td>
<td>55 (49.5)</td>
<td>111</td>
</tr>
</tbody>
</table>

4.1.8.2 Length of time in foster care

As previously stated, all of the children in the study sample had been in foster care for at least eight months. The length of time in care ranged from .67 years to 10.80 years (mean, 2.69, median 2.04, SD 1.93). The mean length of time in care for all children in foster care (on September 30, 2005) was 2.38 years.

For the study sample, children in later stages are increasingly more likely to have been in care longer. Children in the 15 to 18 year old group had a mean length of time in care of 3.35 years compared to a mean of 2.0 years for those children in the youngest age group. Black children were also slightly more likely to have been in care longer, with a mean of 2.75 years in care. According to the federal government’s 2008 statistics, 51% of children and youth exiting foster care in 2006 had been in care for one year or more and 16% had been in care for three years or more.
Length of time in care is treated as a categorical variable in this analysis, as required by chi square. Table 18 shows the length of time in foster care by age group and race/ethnicity. Longer time in care is viewed as a potentiating factor for educational performance because it assumes a lack of permanency and stability. Younger White children are over-represented in the children in care for 2.01 to 3.00 years, but older Black children predominate in the group of children in care for the longest time – more than three years.

Table 18  Length of Time in Care (in Years) by Age Group and Race/Ethnicity (n = 243)

<table>
<thead>
<tr>
<th>Age Group1</th>
<th>Age Group 2</th>
<th>Age Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>0.67 – 2.00 yrs</td>
<td>28</td>
<td>27</td>
<td>18</td>
</tr>
<tr>
<td>2.01 – 3.00 yrs</td>
<td>6</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>&gt;3.00 yrs</td>
<td>6</td>
<td>6</td>
<td>15</td>
</tr>
</tbody>
</table>

4.1.8.3 Program Services

There are four primary program services provided by LCCS to address the educational needs of children in foster care: tutoring, mentoring, alternative to suspension services, and an educational incentive program. Tutoring is an academic support service that may be provided individually or by group and is available through several providers, all of which have a range of services for children and families. Children are referred to
mentoring to improve and support their social-emotional well-being. Mentoring services are an individual or a group service and they are available through multiple providers. For children who are chronically suspended or expelled, a contract service provider offers an alternative educational setting with staff who work with the children on their academics so that they do not fall behind. These providers also help children to improve their social-emotional functioning in order to break the cycle of repeated exclusion from school and lost school time.

The educational incentive program is different from the other services in that it is administered by agency staff. Children who earn A’s and B’s in school were rewarded with a $10.00 gift card to a local store and a certificate congratulating them for their hard work and accomplishments.

Figure 7 shows the percentage of children in each age group who were referred to the various program services. When comparing the contract services only (tutoring, mentoring, alternative to suspension), the youngest children in elementary school were referred by percentage in this order of frequency: tutoring (23.9%), mentoring (7.6%), alternative to suspension (3.3%). The order for the middle school group was mentoring first (33.3%), then tutoring and alternative to suspension equally (15.8%). The oldest children were most frequently referred to mentoring (27.4%), followed by alternative to suspension services (20.0%), with tutoring last (12.6%).

Differences were less pronounced for the educational incentives. Of Group 1 children, 42.4% received educational incentives. Incentives dropped slightly for Group 2 and Group 3 (40.4%, 35.8%).

120
As shown in Figure 8, Black children were referred to services in higher percentages than White children and were nearly equally as likely to be referred to tutoring (27.3%) as to mentoring (26.5%). Significantly smaller percentages of White children were referred to each of the three need-based program services. A larger percentage of White children received educational incentives (43.2%) than did Black children (36.4%).
Table 19 displays the relationships between need for educational support services and referral to such services. There does not appear to be a strong relationship between educational need and referral for services although more moderate and high need children were referred for services than not referred. Children with low educational needs were as likely to be referred for services as not to be referred. Only the children in special education had smaller numbers referred than not referred.
Table 19  Referrals to Educational Support Services by Assessed Educational Need
\( (n = 197) \)

<table>
<thead>
<tr>
<th>Referred To Services</th>
<th>Age Group 1 ( n = 61 )</th>
<th>Age Group 2 ( n = 52 )</th>
<th>Age Group 3 ( n = 84 )</th>
<th>Total ( n = 197 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Low Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>11</td>
<td>14</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>White</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Moderate Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>White</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>High Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>White</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Special Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>13</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>6</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

In all, 109 children or 44.9% of the total sample were referred to at least one contract support service (this does not include the educational incentives, which are not such a service). But just because children are referred to services, does not mean they will receive the services. Of the 109 children referred, 81 (74%) or 33% of the total sample of 243 children, actually received them. For children who did, hours of service received ranged from 1 to 248 (mean, 56.35, median, 16.50, \( SD, 69.21 \)).
Of Black children referred, 23% received services. By contrast, 30.6% of White children were referred for services although they were 45.7% of the study population. Of White children referred, 73.5% received the services. Overall, Black children had a mean of 53.02 service hours and a median of 15.25 service hours versus a mean of 63.82 service hours and a median of 43.50 service hours for White children. These statistics indicate that Black children were more likely to be referred but much less likely to receive services, and received less services overall.

To further explore these relationships and where the differences lie, mean and median service hours received were examined by race and age group. Table 20 shows that in every age group, more Black children than White children received services, however White children received more hours of service in age groups 1 and 2. Black children received more hours of service in age group 3. The table also shows that for Black children who received services, there was a greater variance in service hours received in age groups 1 and 2 than that for White children. In age group 3, however, the greater variance is seen in White children.
Table 20  Program Services Received (in Hours) by Age Group and Race/Ethnicity

<table>
<thead>
<tr>
<th>Age Group 1</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>14</td>
<td>30.41</td>
<td>2.50</td>
</tr>
<tr>
<td>White</td>
<td>8</td>
<td>56.81</td>
<td>24.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Group 2</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>20</td>
<td>46.75</td>
<td>22.75</td>
</tr>
<tr>
<td>White</td>
<td>8</td>
<td>78.56</td>
<td>79.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Group 3</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>22</td>
<td>73.10</td>
<td>54.38</td>
</tr>
<tr>
<td>White</td>
<td>9</td>
<td>56.94</td>
<td>14.75</td>
</tr>
</tbody>
</table>

4.1.9 Educational Performance

There were only 164 of the 243 children in the study sample with grade data for the 2008-2009 school year. The analysis in this study utilized grade data for children with two or more academic periods of grade data, reducing the number to 144. A minimum of two grading periods were needed for comparison so that a measure of change could be calculated.

The educational performance of the children with a sufficient number of grades is shown in Figures 9 and 10. This study defines educational performance by GPA at the end of two, three, or four grading periods within the 2008 – 2009 academic years. There were 164 children in the sample. Range of GPA was from 0.00 to 3.88. Eighty of the children were Black and 64 were White.
Examination of performance by race (Figure 9) shows that between 10% and 13% of the Black and White children had GPA’s below a 1.00, meaning they were failing. Disparities were larger in the 1.00 to 1.99 (“D”) and 2.00 to 2.99 (“C”) ranges, with 19% of Black children versus 11% of White children in the “D” range, and 48% of White children versus 35% of Black children in the “C” range. Percentages in the “B” range are very similar.

![Figure 9 Educational Performance by Race/Ethnicity](image)

Figure 9 Educational Performance by Race/Ethnicity
When looking at GPA by age group (Figure 10), it can be seen that none of the children in the 5 to 10 year old range (elementary school), were failing and only 2% were in the “D” range. This pattern begins to change drastically with the 11 to 14 year old children of whom only 2% are failing but 47% are doing poorly (“D” range). Nearly half of the 15 to 18 year old youth (45%) were either failing (26%) or doing poorly (19%) in school.

Figure 10  Grade Point Average by Age Group
4.2 Bivariate Relationships

In this section bivariate relationships between the independent and dependent variables are depicted. The chi square test of independence was used to answer these questions because it compares frequency distributions of two or more independent samples of categorical variables. Although the requirements for chi square are few, expected cell frequencies that are too small can compromise the findings (Levin & Fox, 2004)

4.2.1 Age, Race and Assessed Educational Need

The analyses in this section seek to learn about the characteristics of children who have been assessed as having high educational needs, either by LCCS or by the school system. The variable “Assessed Educational Need” was coded as follows:

- Coded as “1”
  - LCCS assessed as “low need”

- Coded as “2”
  - LCCS assessed as “moderate need”

- Coded as “3”
  - LCCS assessed as “high need”

- Coded as “4”
  - School system assessed as eligible for special education
Chi-square analysis was employed. Table 21 shows that observed versus expected results tested by chi-square were not significant and that children of different races did not differ on levels of educational need.

Table 21  Chi-Square Analysis of Assessed Educational Need and Race (N = 197)

<table>
<thead>
<tr>
<th>Assessed Need</th>
<th>Race</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
<td>$X^2$</td>
<td>$p$</td>
<td></td>
</tr>
<tr>
<td>Low need</td>
<td>25</td>
<td>22</td>
<td>1.413</td>
<td>.702</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-2.2)</td>
<td>(2.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate need</td>
<td>20</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.9)</td>
<td>(-.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High need</td>
<td>15</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.8)</td>
<td>(1.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special</td>
<td>54</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>(3.1)</td>
<td>(-3.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Age group was significantly related with “Educational Need”, as can be seen in Table 22. Children of different ages differ in the rates at which they were assessed to have high educational needs, $\chi^2(6) = 21.727, p = .001$. Residuals indicate that Age Group 2 (11 -14 yrs old) was significantly associated with having high educational needs as opposed to low or moderate educational needs.
Table 22  Chi-Square Analysis of Assessed Educational Need and Age Group (n =197)

<table>
<thead>
<tr>
<th>Assessed Need</th>
<th>Age Group 1</th>
<th>Age Group 2</th>
<th>Age Group 3</th>
<th>$X^2$</th>
<th>$p$</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low need</td>
<td>25 (10.4)</td>
<td>4 (-8.4)</td>
<td>18 (-2.0)</td>
<td>21.727</td>
<td>.001***</td>
<td>.235</td>
</tr>
<tr>
<td>Moderate need</td>
<td>10 (-2)</td>
<td>8 (-.7)</td>
<td>15 (.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High need</td>
<td>9 (.0)</td>
<td>11 (3.3)</td>
<td>9 (-3.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special</td>
<td>17 (-10.2)</td>
<td>29 (5.8)</td>
<td>42 (4.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**$P = .001$**

4.2.2 Educational Need and Potentiating Factors

Do children who already have high educational need and therefore are struggling academically face additional *potentiating factors* associated in prior research with status as a foster child? *Potentiating factors* examined here are placement stability, length of time in foster care, and lack of educational services. These *potentiating factors* can be additional barriers or challengers that can further compromise children’s ability to be successful in school.
As Table 23 shows, children and youth with high educational needs and those with moderate or low needs or in special education did not differ on whether or not a mental health diagnosis was present $x^2(3) = 7.313, p = .063$. Table 24 shows the results of comparison with placement stability, which were also found to be not significant, $x^2(3) = 2.778, p = .427$.

Table 23  Chi-Square Analysis of Educational Need and Mental Health Diagnosis (n =197)

<table>
<thead>
<tr>
<th>Assessed Need</th>
<th>Mental Health Diagnosis</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>$X^2$</td>
<td>$p$</td>
<td></td>
</tr>
<tr>
<td>Low need</td>
<td>29 (-3)</td>
<td>18 (.3)</td>
<td>7.313</td>
<td>.063</td>
<td></td>
</tr>
<tr>
<td>Moderate need</td>
<td>17 (-3.6)</td>
<td>16 (3.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High need</td>
<td>14 (-4.1)</td>
<td>15 (4.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Education</td>
<td>63 (8.1)</td>
<td>25 (-8.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A small number of children had been in care for a very long time. The range was .67 years to 10.80 years. Boxplots identified two cases as outliers. For the analysis of association with educational need, a categorical variable for length of time in care was created so that the extreme cases could remain in the analysis without compromising the validity of the findings. Spread was evaluated by examining quartiles. Twenty-five percent of the children had been in care for 1.22 years or less, 50% had been in care 2.04 years or less, and 75% had been in care 3.54 years or less. The variable “Length of Time in Care” was re-coded for this analysis as follows:

- Coded as “1”
  - In care from .67 years to 2.00 years
- Coded as “2”
  - In care from 2.01 years to 3.00 years
- Coded as “3”
  - In care longer than 3.00 years

The association between high educational need and length of time in foster care (Table 25) was significant, $\chi^2(6) = 12.856, p = .045$. Examination of the residuals showed a positive relationship between high educational need and placement in foster care for more than three years. Cramer’s V indicates that the relationship is significant but not strong.

Table 25  Chi-Square Analysis of Length of Time in Care and Educational Need (n =197)

<table>
<thead>
<tr>
<th>Assessed Need</th>
<th>Years in Foster Care</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.67 to 2.00</td>
<td>2.01 to 3.00</td>
<td>More than 3.00</td>
<td></td>
</tr>
<tr>
<td>Low need</td>
<td>21 (-.5)</td>
<td>16 (5.5)</td>
<td>10 (-5.0)</td>
<td>12.856</td>
</tr>
<tr>
<td>Moderate need</td>
<td>20 (4.9)</td>
<td>7 (-.4)</td>
<td>6 (-4.6)</td>
<td></td>
</tr>
<tr>
<td>High need</td>
<td>11 (-2.2)</td>
<td>7 (.5)</td>
<td>11 (1.7)</td>
<td></td>
</tr>
<tr>
<td>Special Education</td>
<td>38 (-2.2)</td>
<td>14 (-5.7)</td>
<td>36 (7.9)</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Are children of different ages more or less likely to be referred to services? Chi-square analysis shown in Table 26 reveals that a significant relationship exists between the age group children are in and whether or not they are likely to be referred to educational support services, $\chi^2(2) = 7.837, p = 0.020$. The significant relationships lie with the groups of youngest children (5 – 10 yrs) and the middle group (11 – 14 yrs). The younger group of children was referred to services less than would be expected while the middle group of children was referred more than would be expected. The strength of the significant relationship was not strong.

Table 26  Chi-Square Analysis of Age Group and Referral to Services (n =243)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Referred to Services</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to 10 years</td>
<td>32</td>
<td>60</td>
<td>7.837</td>
<td>.020*</td>
</tr>
<tr>
<td></td>
<td>(-9.3)</td>
<td>(9.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 to 14 years</td>
<td>33</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7.4)</td>
<td>(-7.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 to 18 years</td>
<td>44</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(-1.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
As seen in Table 27, status as “high educational need” was not significantly associated with being referred for educational support through a contracted service, $x^2(3) = 6.242, p = .100$. The children may, however, have been referred to services other than contracted ones. Reliable data is not available to determine if the children were served through a non-contracted provider.

Table 27  Chi-Square Analysis of Educational Need and Referral to Services (n =197)

<table>
<thead>
<tr>
<th>Assessed Need</th>
<th>Referred to Services</th>
<th>(X^2)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Low need</td>
<td>24 (.6)</td>
<td>23 (-.6)</td>
<td>6.242</td>
</tr>
<tr>
<td>Moderate need</td>
<td>21 (4.6)</td>
<td>12 (-4.6)</td>
<td></td>
</tr>
<tr>
<td>High need</td>
<td>17 (2.6)</td>
<td>12 (-2.6)</td>
<td></td>
</tr>
<tr>
<td>Special Education</td>
<td>36 (-7.8)</td>
<td>52 (7.8)</td>
<td></td>
</tr>
</tbody>
</table>

Table 28 shows that the length of time children had been in care was significantly associated with whether or not they were referred to contracted educational support services during the 2008 – 2009 academic year, $x^2(2), 17.057, p <.001$. The longer children had been in care the less likely they were to be referred to educational support services. The strongest relationship was for children who had been in care for two years or less. Placement in foster care for more than two years was negatively correlated with referral to one of the contract services.
Table 28  Chi-Square Analysis of Length of Time in Care and Referral to Services (n =243)

<table>
<thead>
<tr>
<th>Years in Foster Care</th>
<th>Referred to Services</th>
<th>$X^2$</th>
<th>$p$</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.67 to 2.00</td>
<td>66 (13.5)</td>
<td>51 (-13.5)</td>
<td>17.057</td>
<td>.000***</td>
</tr>
<tr>
<td>2.01 to 3.00</td>
<td>12 (-11.8)</td>
<td>41 (11.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 3.00</td>
<td>31 (-1.7)</td>
<td>42 (1.7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***$p < .001$

4.2.3  Educational Service and Educational Performance

Although the number of children with missing grade data is a limitation to this study, the grades that are available allow an opportunity for analysis that previous studies have not offered. The analysis is preliminary and conclusions should be made with caution due to the limitations of the data.

First examined was the relationship between DSM-IV category of mental health diagnosis and educational performance. A series of chi square analyses was conducted on the DSM-IV groupings and educational performance as a dichotomous variable. Two mental health groupings were significant: mood disorders and anxiety disorders. Does presence or absence of a mood or anxiety disorder predict educational performance?
Table 29 shows the relationship between presence or absence of a mood disorder and a cumulative GPA below 2.00 or 2.00 or higher. A child diagnosed with a mood disorder is significantly more likely to have a cumulative GPA below a 2.00, $x^2(1), 5.164, p < .05$. The Cramer’s V statistic indicates that the relationship, while not likely due to chance, is not a strong one.

Table 29  Chi-Square Analysis of Mood Disorder and Educational Performance
(N = 164)

<table>
<thead>
<tr>
<th>Mood Disorder</th>
<th>Educational Performance</th>
<th>$X^2$</th>
<th>$p$</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GPA below 2.00</td>
<td>GPA 2.00 or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16 (5.5)</td>
<td>26 (-5.5)</td>
<td>5.164</td>
<td>.023*</td>
</tr>
<tr>
<td>No</td>
<td>25 (-5.5)</td>
<td>97 (5.5)</td>
<td></td>
<td>.177</td>
</tr>
</tbody>
</table>

* $p < .05$

Table 30 shows the relationship between presence or absence of a diagnosed anxiety disorder and educational performance. Children with a diagnosed anxiety disorder were significantly more likely to have a cumulative GPA below 2.00, which corresponds with a “D” or “F” average, $x^2(1), 4.406, p < .05$. The Cramer’s V statistic indicates that the relationship is significant but not strong.
Table 30  Chi-Square Analysis of Anxiety Disorder and Educational Performance (N = 164)

<table>
<thead>
<tr>
<th>Anxiety Disorder</th>
<th>Educational Performance</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GPA below 2.00</td>
<td>GPA 2.00 or higher</td>
<td>( X^2 )</td>
<td>( p )</td>
<td>Cramer’s V</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
<td>18</td>
<td>4.406</td>
<td>.036*</td>
<td>.164</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < .05 \)

Are anxiety and mood disorders correlated? Further exploration of mental health as a potentiating factor found a moderately strong positive correlation between diagnosis of an anxiety disorder and diagnosis of a mood disorder. Table 31 shows the findings of chi square analysis revealing this relationship. Children diagnosed with a mood disorder were likely to be diagnosed with an anxiety disorder as well, \( x^2(1), 33.311, p < .001 \).

Table 31  Chi-Square Analysis of Anxiety Disorder and Mood Disorder (N = 243)

<table>
<thead>
<tr>
<th>Anxiety Disorder</th>
<th>Mood Disorder</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>( X^2 )</td>
<td>( p )</td>
<td>Cramer’s V</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>23 (13.9)</td>
<td>15 (-13.9)</td>
<td>33.311</td>
<td>.000***</td>
<td>.370</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35 (-13.9)</td>
<td>170 (13.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < .001 \)
Are children who are doing poorly in school referred to services? To answer this question, the variable “grade point average” was re-coded into a dichotomous variable, “doing poorly, yes/no”. Grade point averages below 2.00 were considered to be doing poorly (“1”) and grade point averages of 2.00 or above were coded as not doing poorly (“0”). Referral to services was coded “1” (yes) or “0” (no).

Results of chi-square were not significant, $x^2(1) = 1.177, p = .278$, indicating that there is no difference between children doing poorly in school and those not doing poorly in referral to academic support services.

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Referred to Services</th>
<th>$X^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 2.00</td>
<td>Yes: 22 (3.0)</td>
<td>No: 19 (-3.0)</td>
<td>1.177</td>
</tr>
<tr>
<td>2.00 or above</td>
<td>54 (-3.0)</td>
<td>69 (3.0)</td>
<td></td>
</tr>
</tbody>
</table>

The number of hours of educational support services that individual children received over the eleven month study period ranged from 0 to 247. For this analysis, this researcher converted the variable “Hours of Service Provided” from a scale to an ordinal variable by creating three groups. It was found that 81 children had received services
during the study period, 61 with grades. Of the children who received services, 25% had received 2 hours or less of service, 50% had received 16.5 hours or less, and 75% had received 92.88 hours or less of service. Hours of service were grouped and coded in the following way:

- Coded as “1”
  - Service hours from 1 to 17
- Coded as “2”
  - Service hours greater than 18

In order to meet the assumptions of chi-square related to frequencies per cell, it was necessary to create a dichotomous variable for service hours rather than a variable with more groups. Had the findings been significant, this would have limited the utility of the findings, however no statistically significant relationship was found, \( x^2(1) = 1.841 \), \( p = .175 \). Results are in Table 33.

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>Service Hours</th>
<th>( X^2 )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 2.00</td>
<td>5 (-2.4)</td>
<td>13 (2.4)</td>
<td>1.841</td>
</tr>
<tr>
<td>2.00 or above</td>
<td>20 (2.4)</td>
<td>23 (-2.4)</td>
<td></td>
</tr>
</tbody>
</table>
No significant relationship was found between grouped hours of service provided and positive change in educational performance, $x^2(1) = .258, p = .611$. Change was calculated by subtracting the grade point average from the first grading period from the grade point average of the last grading period. Each case was then coded as “0” for “negative or no change” and “1” for “positive change”. It is important to note that there were only 61 valid cases to be sampled for the analysis.

Table 34 Chi-Square Analysis of Service Hours Received and Positive Change in Educational Performance (n = 61)

<table>
<thead>
<tr>
<th>Positive Change in GPA</th>
<th>Service Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 17</td>
</tr>
<tr>
<td>Yes</td>
<td>9 (.8)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6 (-.8)</td>
</tr>
</tbody>
</table>

4.2.4 Summary of Bivariate Findings

Bivariate analysis was performed to explore relationships between child characteristics and reasons for foster care entry, potentiating factors, assessed educational need, service provision, and improvement in academic performance. A series of two-way chi square analyses of independence indicate that children in the middle school age level (11-14 years old) were significantly more likely to have high educational needs and to be referred to academic support services to address those needs. Having high educational
needs was significantly associated with a longer stay in foster care. Finally, children who had been in foster care for more than two years were less likely to be referred to educational support services. Although statistically significant, the relationships were not strong.

Significance was not observed between a need for services and referral to educational support services. Also, no correlation was found between receiving more hours of educational support services and an improved grade point average, however measure used for service provision was very limited in its sensitivity to smaller effects.

4.3 Multivariate Relationships

Logistic regression using the Forward Log Likelihood (LR) method for selection of variables entered into the model was conducted to determine which independent variables are significant predictors of a) low academic performance and b) positive change in academic performance. This method was chosen because it enters independent variables into the model one at a time, using the likelihood ratio to determine variable selection (Mertler & Vannetta, p 326). The independent variables entered into two logistic regression models were race, age group, reason for foster care entry, length of time in care, high educational need, and referral to support services.
All data had been screened for missing data and outliers prior to bivariate analysis. Outliers were present in the variable “Length of Time in Care” but were not an issue for any other variables. Logistic regression analysis is sensitive to outliers (Mertler & Vannetta, 2004) so data for length of time in care was grouped and transformed into an ordinal variable in order to prevent misleading results. This allowed children who had been in care for exceptionally long periods of time to remain in the sample.

Logistic regression is also sensitive to cells with small frequencies, which can result in misleading findings. Mertler and Vannetta (2004) recommend “collapsing” some variables to ensure that the analysis is not compromised by too many empty or small-frequency cells. For this reason, and because this study is exploratory and cannot be assumed to imply cause and effect, all variables were used in their categorical forms and grouped where needed. Multicollinearity was not assessed prior to analysis because all of the independent variables were categorical.

Regression results, shown in Table 35, indicate the overall model includes one predictor (age group) and is statistically reliable in distinguishing between poor academic performance (0.00 to 1.99 GPA) and non-poor academic performance (-2 Log Likelihood \( = 125.772, x^2 = 27.634(2), p = .000 \). The model correctly classified 72.3% of cases. All of the cases correctly classified predicted GPAs of 2.00 or higher. Thus the model better predicted non-poor performance than poor performance. Younger age (5 to 10 years old) was a significant predictor of positive academic performance as indicated by the Wald statistic.
Table 35  Regression Coefficients for Educational Performance

<table>
<thead>
<tr>
<th>Variables Included in the Model</th>
<th>B</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Group 1</td>
<td>20.906</td>
<td>.000</td>
<td>1</td>
<td>.998</td>
<td>1.200</td>
</tr>
<tr>
<td>Age Group 2</td>
<td>.658</td>
<td>2.109</td>
<td>1</td>
<td>.146</td>
<td>1.931</td>
</tr>
<tr>
<td>Constant</td>
<td>-.297</td>
<td>.259</td>
<td>1</td>
<td>.251</td>
<td>1.346</td>
</tr>
</tbody>
</table>

Using the same methods, a logistic regression analysis was conducted to determine the degree to which the variables of race, developmental stage, reason for foster care entry, length of time in care, high educational need, and referral to contracted educational support services are predictors of academic performance. Seventy-seven cases were applied to the model. None of the predictor variables significantly predicted change in GPA so none were entered into the model.

4.3.1 Summary of Multivariate Findings

The results of logistic regression analysis described in this section support theories advocating a developmental perspective in child welfare services, particularly as they pertain to educational support. Of the independent variables examined, only age group, in particular young age (5 to 10 years old) was significant in predicting educational performance. In other words, the only significant predictor found for children doing well, was young age. The children in elementary school were not found to be having academic problems.
Chapter 5: Discussion

Although causal conclusions cannot be drawn from the analysis, the results of this study expand on previous research. Findings suggest that:

- Younger children receive fewer services to support their human capital development. When they are referred, services are likely to be tutoring services, indicating a focus on cognitive support.
- By middle school age, many children were demonstrating serious human capital deficits. Services provided for older children shifted away from tutoring to mentoring, indicating a change to social-emotional support and/or behavior management.
- Children were most likely to be referred to services within the first two years in care. Service referrals decreased for children who had been in care for more than 2 years, yet the longer children had been in care the greater their need for human capital support. This indicates that human capital may decline if not adequately supported through service provision.
- Black children were older and remained in care longer, making that population at risk for disparity in service provision and formation of human capital.
• Depression and other mood disorders interfere with children’s development of human capital. Older and Black children had more diagnoses of mood disorders than White children creating greater potential for disparity in human capital formation.

This Chapter describes the most prominent findings in depth as well as some of the obstacles the research process revealed. It continues with a discussion of implications for child welfare practice and policy. Strengths and limitations are presented, and finally, recommendations for future research to advance knowledge in this under-studied area are offered.

5.1. Findings Related to the Development of Human Capital

Human capital is defined as those attributes that have been shown to be predictive of future productivity, self-sufficiency, and healthy adult functioning (Wulczyn, 2008). These attributes include physical, social-emotional, and educational well-being. According to human capital theorists, investments in human capital produce the greatest returns when they are made early in life; when brain development is occurring at a rapid pace and early foundational skills are being formed. Conditions favorable to the development of human capital include a strong foundation of cognitive and social-emotional skills which is resilient to environmental risks and challenges and favorable to the successful acquisition of new skills. Success fosters motivation and healthy self-esteem. Motivation leads to further skill development, successful interactions with others, and positive adaptation to the school environment (Wulczyn, 2008).
Poverty, exposure to violence or prenatal substance abuse, insecure attachment, and interactions with parents that are harsh, rejecting, abusive, or neglectful, can compromise physical, cognitive and social-emotional health, (Perry, 1997; Egeland, Sroufe, & Erickson, 1983; Veltman & Browne, 2001) and thus the early foundation of human capital. The children studied were school-aged. The experiences to which the children were exposed in infancy and early childhood or prior to entering foster care are beyond the scope of the present study, however it is recognized that like all children entering foster care, they bring the effects of these experiences with them into foster care (Karr-Morse & Wiley, 1997).

Descriptive findings support that the foster care children studied in foster care are a vulnerable population in terms of human capital development. Older and minority children are particularly at risk. Of the children studied, 45% of youth 15 to 18 years old had a “D” or an “F” grade point average. High school youth who are failing are not accumulating high school credits needed to graduate. Slightly younger children in the 11 to 14 year old group were already struggling academically. Unlike the oldest group, only 2% were failing, however 47% had a “D” average. Overall, nearly a third of Black children had lower than a “C” grade point average compared to 21% of White children. Approximately half of the children in each of the two older groups were in special education classes.

5.1.1 Social-emotional Well-being

Foster children also faced social-emotional challenges that likely preceded their foster care experience. Evidence that some children presented behavioral problems was
manifested in the documented reasons that children entered care. While most of the children in each age group and both races entered care due to having been neglected, non-maltreatment reasons for entry that may signal child-related problems began to emerge and increase for the older groups. For example, dependency as a statutory term implies that the caregiver is unable to care for the child but is not at fault (English, 1998). There are a broad number of reasons that a caregiver is unable to care for a child that are unrelated to the child’s behaviors, such as parental mental health or other disability, but the increase in dependency-related foster care entries as children get older may suggest that some older children enter foster care because the parental capacities of non-abusive caregivers are insufficient to meet the challenging needs of the child. Nearly one in four (24%) of children 15 to 18 years old entered care due to dependency versus 11% of children 5 to 10 years old and 7% of children 11 to 14 years old. Teenagers have greater capacity to care for and protect themselves; therefore the higher percentage of older teenagers entering care due to dependency would appear to indicate a shift to a child-related reason for foster care entry.

Other non-maltreatment related entry reasons appearing to indicate problems in child social-emotional functioning were “caregiver inability to cope”, “relinquishment”, “child behavior problems” and “delinquency”. When these categories and dependency are viewed together, 15% of the youngest group, 23% of the middle group, and 41% of the oldest group entered care for one of those reasons. Differences by race do not appear until the oldest group. Of Black youth 15 to 18 years old, 46% entered care due to reasons potentially related to problems in social-emotional functioning versus 34% of
White youth in the same age group. The disparity could suggest that the social-emotional needs of some youth are not being adequately met at younger ages and that the child welfare system is charged with addressing the complex needs of older youth within a short time frame for involvement, since most youth leave the system at the age of 18. Or, because the methodology of this study did not identify how old the children studied were when they entered care, the findings may indicate that children who enter care for non-maltreatment reasons remain in care longer and are at risk of emancipating from foster care rather than leaving care to more positive permanency outcomes such as reunification with family or adoption.

Another child characteristic explored that indicated problems in social-emotional functioning was the mental health status of the children. More than half of the studied children (58%) had at least one mental health diagnosis, the most common being attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD). Looking only at the 140 children with a mental health diagnosis, 87% of 5 to 10 year old children and 81% of 11 to 14 year old children, but only 57% of 14 to 18 year old youth had a diagnosis in the DSM-IV grouping of attention deficit and disruptive behavior disorders. Mood disorders, including depression, dysthemia, bipolar disorder, and mood disorder, begin to become evident in the older groups, with prevalence increasing with older age groups. A mood disorders was diagnosed in only 13% of the 5 to 10 year old children, increasing to 42% of the 11 to 14 year olds and to 64% of the 15 to 18 year old youth. An emerging disparity in the diagnosis of a mood disorder is observed not only by age group but by race. Only 6 children in the youngest group, 13% of White children and
14% of Black children in that group had a mood disorder. The percentage of Black children with a mood disorder increased to 48% compared to 27% of White children in the middle group, and 83% of Black children versus 43% of White children in the oldest group.

Post-traumatic stress disorder (PTSD) and anxiety disorder were categorized in the DSM-IV grouping of “anxiety disorders” and followed similar age and race patterns, although fewer children had one or both of these diagnoses. Of the 36 children 11 to 14 years old with a mental health diagnosis, 31% (32% of Black children and 27% of White children) had an anxiety disorder. The disparity increases in the oldest group to 43% of Black youth and 21% of White youth.

The findings related to mental health carry potentially strong implications for older and Black foster care youth. Chi square analysis indicated that mood and anxiety disorders are significantly correlated with each other with fairly high power in the study population. Logistic regression modeling was not significant in predicting a GPA over or below 2.00 based on DSM-IV category of mental health diagnosis; however the absence of a mood disorder was the greatest predictor of a positive change in GPA over the academic year in chi-square analysis. Additionally, chi square analysis suggested that absence of an anxiety or mood disorder significantly predicted a grade point average over 2.00, meaning average to above average academic performance.

Numerous prior studies have linked childhood maltreatment to the development of psychopathology in children and adults (Yates, 2007, Cicchetti & Toth, 1995; Veltman & Browne, 2001). Researchers examining school performance of maltreated children
have described how problems with low self-esteem and affect regulation and difficulty with impulse control and moderating emotions often make adaptation to school challenging for maltreated children (Cicchetti & Toth, 1995, Perry, 2001; Eckenrode, Laird, & Doris, 1993). Children can have difficulty forming healthy peer and adult relationships. If their behavior is disruptive, zero tolerance policies can result in frequent suspensions and expulsions, furthering feelings of alienation and increasing the likelihood of identification with negative peer groups. If children are missing class time, for most it will be even more difficult to keep up with their peers academically. Children who are depressed may be withdrawn and unmotivated. Separation from family and the lack of permanency and stability associated with foster care placement may intensify feelings of disconnection, worry, and hopelessness. If adults around them do not take an active interest in their educational progress, encouraging them to succeed and recognizing their accomplishments when they do, children with depressive tendencies may not see educational success as an important or realistic goal for themselves. The implications of the findings related to social-emotional health suggest that more research is needed to understand the antecedents and correlates of mood and anxiety disorders among older children in foster care, and Black children in particular so that the child welfare system can ensure that its services ameliorate rather than contribute to negative outcomes for affected children.
5.1.2 Findings Related to Educational Need

A strength of this study is that it utilized data from Lucas County’s educational initiative for foster children. As part of this program, LCCS conducted assessments of the educational needs of children entering foster care using the NEAT tool. Each assessment evaluated grade level cognitive functioning along with a subjective assessment of the child’s social-emotional functioning. Assessments resulted in an assigned need level rating of low, moderate or high educational needs along with individualized recommendations for services or interventions deemed appropriate in the professional judgment of the assessor. Children who were in special education were not re-assessed because they had already been assessed and their needs and services had already been determined by the school. A total of 197 study children had assessed need levels, either identified by LCCS or by the school system.

Nearly half of the 197 children (45%) were in special education and another 15% were assessed by LCCS as having high educational needs. Rates of high educational need, both assessed by LCCS and by special education placement, were greatest for children in the middle age group. Of the 52 children assessed in this group, 92% were assessed by LCCS as having high needs or were in special education versus 43% of the youngest group and 61% of the oldest group. Percentages of special education placement were higher for Black children within every age group.

A review of special education classifications revealed that 51 children (58%) were in special education due to severe emotional disturbance (SED). The findings related to educational need further supports prior research describing the academic vulnerability of
foster care children and the need for the child welfare and educational systems to improve their understanding of and methods of addressing the needs of this population (Altshuler, 2003; Avery, 2003; Christian, 2003).

5.2 Findings Related to Potentiating Factors

This study related the concepts of *potentiating* and *compensatory* factors to child welfare service provision. First introduced by Garborino (1976) in his description of ecological-transactional theory, these concepts describe influences or experiences that have the potential to act as buffers or challengers to healthy development within the nested micro, mezzo, and macro systems. Lack of stability resulting in multiple school changes and extended foster care stays have been discussed in prior research as creating barriers to school success for foster children. Research exploring the educational experiences of children in foster care has identified systemic problems such as delays in school enrollment, problems with transfer of school records, and lack of advocacy and caring adult involvement in their educational progress as impeding the academic success of foster children (Christian, 2003; Courtney, et al., 2004; Altshuler, 2003). It is logical that children with longer stays in care would have increased exposure to the systemic problems, and would at the same time be dealing with worry and uncertainty about the future that can accompany a lack of permanency. Children in care for a shorter time may be doing better because they are in a safe environment where their needs are being met. No longer in an abusive or chaotic environment, they may be better able to concentrate on their school work.
Children who change placements during the school year must adapt to new caregivers and expectations, different peers, curriculum, and teachers. These children may at the same time be coping with disrupted attachments and bonds formed in their prior placement setting. Children who are stable may have their physical, educational, and social-emotional needs met to a greater degree than they experienced prior to placement in foster care. This study equated a longer stay in foster care and placement instability as *potentiating* factors to educational well-being. Shorter foster care stays and placement stability were viewed as *compensatory* factors.

Findings related to stability revealed that overall, 49% of the children had at least one move during the study period. Rates of stability were very similar for Black and White children. Children 11 to 14 years old were the most unstable, with 56% experiencing at least one move. Although half of the children were not stable for the study period, statistical testing did not identify stability or lack of stability as a significant *potentiating* or *compensatory* factor for the study population, as would have been expected. Further research identifying the nature and timing of the moves may help to explain this finding. It is also possible that because of the LCCS focus on school stability as an educational program initiative, a change in schools did not accompany the move for some of the children. Another possible explanation is that the number of moves would be a better measure to determine an observable effect on grade performance. It could be that while one move is not necessarily harmful, two, three, or more moves is significantly harmful.
Longer stay in foster care was found to act as a potentiating factor. Consistent with prior research, older Black children were in foster care longer than the other groups. More than a third (35%) of Black children versus 24% of White children had been in care for more than three years. Conversely, a greater percentage of White children (32% versus 12% of Black children) had been in care for more than two years but less than three years. Chi square analysis found that stay in foster care of more than three years significantly predicted high educational need, either assessed by LCCS or the school system.

Children in foster care for more than three years cannot have a goal of reunification with family because federal child welfare laws limit the length of time families can work toward reunification to two years. Therefore most children in foster care for more than three years would have a permanency goal of adoption. These findings are statistics indicating that fewer older Black children exit foster care to adoption, but the significant correlation with high educational need points to a need for further investigation into the link between educational performance and permanency for this population. Possible explanations are that the educational performance of children who languish in foster care deteriorates as a result of the emotional effects of the lack of permanency or it may be that children in this population are not adopted because they have significant needs that make them less adoptable.

Predictive analysis of service provision as a potentiating or compensatory factor excluded educational incentives because children referred for incentives were those who were doing well as opposed to referrals to the three contract services which were likely to
indicate an academic or social-emotional need that interfered with positive school performance. Chi square analysis suggested that services acted as potentiating factor for some groups of children and as a compensatory factor for other groups of children. Children in the 11 to 14 year old group were significantly more likely to be referred for services than the other age groups. This age group was more likely to have high educational needs. Children in the youngest age group, a group that was doing well in school overall, was significantly less likely to be referred to services. The findings suggest that referrals were made to services based on what was known about the child’s academic need. Children in care for two years or less were significantly more likely to be referred to services, indicating that needs were identified early upon children entering care and efforts were made to address the needs through provision of contract services.

Another finding related to service provision was that children in special education were less likely to be referred to services than children in the other three groups. This may be because children in special educational qualify and receive services through the school system therefore referrals for additional services are not needed. Lack of referral to services may be a potentiating factor for children in care for extended lengths of time. Children in care for three years or longer were significantly less likely to be referred to services. This group of children is also significantly more likely to have high educational needs. Children in this group were more likely to be Black and older. Lack of supportive services while in care is likely to constitute a potentiating factor to children who are older and Black, and who are doing poorly in school.
Descriptive findings suggested that although Black children were more likely to be referred to services, White children received more services overall. More investigation is needed to understand why Black children appear to have a greater need but receive fewer hours of service. Possible explanations are that the services available do not meet the children’s needs and are therefore discontinued or there may be barriers to participation in the services, such as transportation, location of the service provider, or failure of the caregiver to get children to the services. It is also possible that there are non-contracted services available to this group and that they receive services from those providers. The answer cannot be known without further investigation. Because the findings of this study are not generalizable to other foster care populations, similar studies of other foster care groups and service provision would also be useful to increasing the understanding of this issue.

5.3 Challenges to the Research

This study identified obstacles related to data that may help to explain why county-based studies of this type are rare. Lucas County Children Services (LCCS) is a public county agency that, beginning with the Beech Acres study in 2003, has demonstrated a commitment to improving educational outcomes of children in its care and custody that few other agencies of its type have demonstrated. To the credit of its administration and Board of Directors, the agency has devoted resources to training staff and foster parents, developing contracts for educational support services, and even creating new staff positions dedicated to monitoring and advocating for the educational needs of foster children.
In developing its education program, LCCS has implemented or tried to implement the major recommendations upon which the Beech Acres study and major advocacy groups such as The Legal Center for Foster Care and Education agree: child welfare agencies should reduce systemic barriers to educational success for foster children by eliminating enrollment delays, providing monitoring, advocacy, tutoring, mentoring, and other support services, reducing school mobility, decreasing suspensions and expulsions, and develop collaborative relationships with the school systems. Yet without complete and reliable data, a rigorous evaluation of program effectiveness is not possible so the impact of LCCS’ efforts remains unknown.

Still, because of its educational program and its efforts to collaborate with the major school system, LCCS has more data about the educational experiences and performance of its foster children than other Ohio child protection agencies. A goal of this study was to find out what could be learned from the available data that had been collected and to identify what data had not been collected.

5.3.1 Data Collection

Data for this study were extracted from three different types of sources and combined to be analyzed at the child-level. This was a challenge in itself. All public child welfare agencies are mandated to collect certain information and store it in a state child welfare database. Information about the children in care, including custody status and demographics such as date of birth, race/ethnicity and reason for foster care entry was easily attainable because they must be reported to the state. The number of moves during the year was more difficult due to the fact that each move is coded as a separate
event resulting in multiple listings for the same child in the database. The same problem was found in the contract services database. Thus the data had to be re-organized so that “events” were tied to an individual child rather than children tied to new “events”. In other words, the data were not entered and stored at the child-level.

The database which held educational assessment and grade data presented the greatest challenge. Because data needed to be combined and de-identified before any analysis could be done, a unique identifier called Client ID, common to the state database and agency administrative records (placement records and contract services) was the logical choice, but the education records did not consistently include Client ID. Many of the children’s records were identified only by the child’s name. This required numerous procedures in Excel to match children by name with the “base”, or state database in order to obtain their client ID. For some children, the names did not match due to entry error or other reasons and manual look-up was necessary to confirm that the right child was included and to identify the correct client ID. To ensure the integrity of the data, numerous data-checks and data-cleansing efforts had to be done. Only then could the data be combined and de-identified for analysis.

This information is included here as a “major finding” because it illustrates the difficulty of research in this area. Even in an agency committed to helping foster children succeed in school, data is not collected in a consistent, reliable, and systematic way that facilitates monitoring of children’s educational needs, allows for identification of patterns indicating that action should be taken, and helps the agency to know how if its resources
are the right ones and if they are being used effectively. In a time of increasingly restricted resources, lack of data about effectiveness can doom an existing program and inhibit other child welfare agencies from directing their resources to the same problem. This would be a tremendous loss of opportunity given the overwhelming research that the problem exists and has not been adequately addressed.

5.4 Strengths and Limitations

It is a strength of this study that it examined outcomes for school aged children from 5 to 18 years old on a series of measures associated in previous research with not only educational well-being outcomes, but to a lesser extent, with social-emotional well-being outcomes. The current study improved on previous research in three ways. First, it used child-level data to link foster children’s actual grade performance with other child welfare variables, including referral to services and service provision. Second, it explored the racial and age differences within the findings, building on previous research describing the educational performance and needs of children in out-of-home care. Third, the population of children included in the study was in foster care for a minimum of eight months. Previous studies used thirty days as a benchmark or used point-in-time data. The eight month time-frame ensures that all of the children were in care for all or most of one academic year, allowing for an examination of their relevant experiences and educational performance over that academic year.

Previous studies examining school stability have primarily relied upon self-reported information from foster care alumni or older children in foster care relative to their experiences (Pecora, et al., 2003, 2005; Courtney, et al., 2004). This study differs in
that administrative data identifying placement changes at the child level was used to assess stability for a single academic year. This research is unique in that secondary, administrative data was used to determine the academic performance of foster children and the systemic barriers they faced in contrast to similar studies that rely on combined administrative and qualitative data such as surveys, interviews and focus groups. One of the reasons for this is illustrated by the limitations of this study. Reliable administrative data about the academic experiences of children in foster care is scant. In child welfare, data reporting related to well-being lags far behind that related to safety and permanence.

Researchers utilizing interviews, surveys and focus groups have found these methods to be difficult as well. Recently, The Urban Institute, Chapin Hall and The National Opinion Research Center at the University of Chicago collaborated on a multi-site evaluation of services provided through California’s Foster Youth Services program. Using rigorous methodology that included random assignment and a control group, Courtney and Zetlin worked with administrative data and self-reporting of child welfare staff, caregivers and foster youth to assess the impact of the Early Start to Emancipation (ESTEP) tutoring program. In their report published by DHHS (2008), the researchers discussed how sound research methodology can conflict with child welfare operating procedures leading to problems with identification of an appropriate sample and control of confounding variables. Additionally, it was determined that many youth in the control group were very likely to have received tutoring from another source. The high mobility of the study population made follow-up difficult (DHHS, 2008).
The limitations of the current research are many, and go to the problems hindering rigorous research in this area. First, validity concerns for the variables include:

(1) Reason for foster care entry: Children are often the subjects of many reports to child protective services before problems become so serious that they are placed in out-of-home care. It is also common for children to be the victims of more than one type of maltreatment. This measure cannot be used as a valid representation of the maltreatment experienced by the child prior to entering care, which would have been a useful addition to this study, given prior research describing the effects of different forms of maltreatment on educational performance. The information provided had adequate validity but somewhat less utility.

(2) Educational need: Two measures were used to determine if children had high educational needs: a) assessment by the school system with a determination of eligibility for special education status, and b) assessment by the contracted provider using the Norris Educational Assessment Test (NEAT) resulting in an assigned level of “high need”. Both determinations would be made by a psychologist but involve very different testing procedures and the results have different meanings and implications. Information about the validity and reliability of the NEAT was not found.

(3) Services: A major limitation of this study was that referral or receipt of educational supportive services was based only on those services provided to children by contract with LCCS. It is certain that many children were referred and received tutoring services through their school, church, or another provider that is not a contracted
service provider. At the time this study was done, reliable data about the number of children receiving these types of services was not available in aggregated form, although LCCS was in the process of developing a system to monitor these types of services.

(4) Grades: Some grades for children in foster care are received on an automated basis from the Toledo Public School (TPS) system, the major public school system in Lucas County; however, the system only provides some of the grades. Grades for children in elementary school are not given. Grades for children attending schools outside of Toledo Public School system, the major school system in the Lucas County are not made available on an automated basis. Caseworkers and Educational Program staff request grades that are not automatically sent, but school mobility, unpaid fines, and other problems still result in many children without grade data in the tracking system. Another problem is that many schools use alternative grading systems that do not equate to letter grades, or even to a pass/fail comparison. Finally, grades are a subjective measure that can vary greatly by teacher or school. For these reasons the variable “grade point average” was transformed to a dichotomous variable, a decision that increased reliability but sacrificed sensitivity in the process.

(5) Missing data: Three variables had substantial amounts of missing data: reason for entry into foster care, assessed educational need, and grade performance. Children with missing information may differ from other children in ways that could potentially change some of the findings. Because of missing data and the types of
variables available for use, it is possible that some of the measures may not be sufficiently sensitive to the program effects.

(6) While the use of a full or almost full academic year of grade data is a strength it is also a weakness. The grades were not sufficient to detect trends either in improvement or in deterioration of performance. Longitudinal tracking would provide a better measure of whether or not services were having an effect on educational performance. It is estimated that 50%-60% of foster children in LCCS custody attend the Toledo Public School system (TPS). The TPS system is an urban school system that fluctuates between the lower and mid-ranges of performance.

Poor quality schools may be the reason that some children have educational difficulty, rather than maltreatment or foster care effects. The study does not account for other factors that provide other likely explanations for the differences observed. These include differences in the substitute care environment and the quality of the relationships that exist between children and important adults in their lives.

5.5 Implications for Practice

A large body of research supports that maltreatment and other adverse experiences, environments and relationships in childhood can compromise healthy neuro, social-emotional and cognitive development (Perry, 2001; Schore, 2002; Yates, 2007) resulting in problems in future relationships and academic functioning (Burley & Halpern, 2001; Eckenrode, et.al. 1993). Research also supports that problems identified and addressed early are more amenable to change and can have a larger impact than problems not addressed until they become more severe (Heckman, 2001). It follows that

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early identification of problems would be advisable so that appropriate interventions can occur. The most effective interventions might begin long before vulnerable children become school aged and may be those that support the well-being of children in their own homes by promoting attachment and the healthy parent-child interactions (Vandervere, et al., 2004).

Assessing the mental health and educational needs of children entering foster care would likely be helpful in that needs and barriers could be identified and addressed early. According to Kilburn & Karoly (2008):

Conducting screening of children as soon as they enter the foster care system so that they can be referred to mental health services would be likely to promote healthy development and prevent problems later in childhood. Research suggests that early access to quality mental health services for children in foster care helps reduce later emotional disorders in young adulthood, enhance educational success, reduce social isolation, and prevent placement of their own children, with considerable savings to society.

For children who remain in care for longer than a year, repeating the assessments could allow for the monitoring of the adequacy and appropriateness of services provision. Involvement of foster parents and biological parents (in cases where parental rights have not been terminated by the courts) in decision-making and educational planning could provide a positive message to children that the adults in their family system care about and value their educational progress. If children go home or custody is transferred to
another adult, a plan could be made to continue services and to provide a home environment conducive to learning and supportive of education.

Human capital theory implies that if the child welfare system put practices into place to maximize the development of human capital within the foster care environment, powerful benefits are possible. First, human capital equates to well-being, and it is a primary mandate of all child welfare agencies to promote the well-being of children served. Second, such services have the potential to reduce the need and associated costs of future remedial services (Wulczyn, 2008). Data that is consistently collected and readily available to child welfare administrators would appear to be necessary if interventions are to be timely, appropriate and effective. Aggregate data could provide the tools whereby administrators would have the ability to monitor how many of their foster children change schools, how many are in special education, how many are failing versus doing well, improving versus deteriorating, and graduating versus dropping out, thus facilitating data-driven decision-making. Citing the potential for existing data to provide for monitoring of service effectiveness, Wulczyn, Oberleke and Haight (2009) state:

There is certainly much more to learn, but for now the main challenge has more to do with making better use of the information we already have so that policymakers, practitioners, advocates, and families themselves have a clearer sense of how the system is doing.

Training in child development, special education law, and how to advocate for children with school staff could be beneficial to child welfare staff, foster parents and
involved biological parents. Such training may help to encourage active involvement in children’s educations. Most children who enter foster care will be reunified with parents and families (DHHS, 2008). Interventions that involve families and communities could be designed and delivered in a way that facilitates continuity in the supports that children are receiving. Child welfare agencies can help to promote such continuity by work with their communities to ensure that needed services are available to families in the neighborhoods where they live.

Minority children are over-represented in foster care therefore barriers to academic success that are systemic in nature and related to status as a foster child may disproportionately impact the human capital of minority children and place them at a greater disadvantage for adult well-being. Ecological theories would suggest that African American families may have different experiences within the micro, mezzo, and macro environments that might influence their experiences both prior to and during involvement with the child welfare system. Ciccetti and Toth recommend that:

Intervention with maltreating families must [also] be sensitive to variations in family organizations, structures, roles, and patterns of relating that are influenced by cultural, racial, and ethnic differences. Intervention approaches need to be acceptable and consistent with the cultural orientations of the families served.

5.6 Implications for Policy

Education can provide a path out of poverty, so in recent years there has been increased attention to populations with disparate educational outcomes. The current
policy climate is ripe for the type of change needed to begin to address this problem. The American Safe Families Act of 1997 (AFSA) officially made child welfare agencies accountable for the first time for ensuring the educational well-being of children in foster care. More recently, Fostering Connections to Success Act of 2008 directed child welfare agencies to promote academic stability for children in care by keeping them in their school of origin whenever it is in the best interest of the child to do so.

The Legal Center for Foster Care and Education (2009), sponsored by the American Bar Association and Casey Family Services, is advocating for legislative barriers that hold back educational progress for foster children to be removed, including systemic barriers to sharing of educational data and other salient information between the child welfare and school systems so that both systems can better collaborate and monitor the education of foster children. Economists such as Dr. James Heckman (2001) and prominent child welfare researchers such as Dr. Fred Wulczyn (2008) are illuminating the fiscal benefits of investing in education for children in foster care and how these investments can lead to decreased human and social problems such as incarceration, welfare-dependence, unemployment, and the continued cycle of maltreatment.

Statistical findings of this study are very limited and do not have sufficient power for policy conclusions to be drawn, however descriptive statistics support prior research pointing to the educational challenges faced by children in foster care. The strongest need is for a system of data-collection and sharing. This will require a coordinated and committed effort. Accurate data about the educational performance, including suspensions, expulsions, performance on standardized tests, and attendance is needed so
the data can become a positive tool in meeting the educational needs of children in foster care. Kathleen McNaught of the American Bar Association testified about the need for data:

Even in the states that have already made great strides to improve education stability and continuity for children in care, there is minimal data to document these advances. States must collect this critical data, and receive support and guidance to track improvements for children in care. Tracking data such as attendance, the number of school changes and enrollment delays, is necessary to document the implementation of the education stability provisions of the new law and show improvements in education outcomes for children in care. Without effective information and data-sharing across child welfare and education agencies it is impossible to capture this critical information. (Testimony before the U.S. House of Representatives Subcommittee, 9/15/09)

The Legal Center for Foster Care and Education advocates using existing data systems. The SACWIS system, recently implemented throughout Ohio, provides an opportunity and a vehicle to collect and analyze educational data for foster children across the state. Built into SACWIS are fields for information about children’s educational progress and barriers, but the fields are not mandatory and more work needs to be done to standardize the information and make a plan for analysis, dissemination and use of the information. In its brief, “Solving the Data Puzzle”, the Legal Center for Foster Care and Education describes how the State of Washington has adapted its SACWIS system to collect educational data for children in foster care (2008):
Washington recently amended its SACWIS system to add specific education elements that will enable caseworkers to more effectively meet the needs of children in care and will permit statistical data collection regarding key education issues. Washington’s SACWIS database now includes the following data fields: enrollment dates; school type; type of enrollment (e.g. vocational, full or part time); G.P.A., current school performance (graded and non-graded); credits earned; completion status; whether child has repeated a grade; suspensions (current and history); recent conduct in school; special education data (needs, services provided, history of special education, type of limitation, and if appropriate, reasons for change in placement); and whether or not the child has or needs an advocate. The system specifically includes the child’s state identification number which could be used to collect a broad array of additional data.

Partnerships with the educational system provide another opportunity for data collection and sharing for mutual benefit. According to the Legal Center for Foster Care and Education Data Brief, data mandated under No Child Left Behind (NCLB) to be collected by the school systems, if accessible to child welfare, could provide useful information about truancy, suspensions and other disciplines, state testing data, grade retention, and other educational information that could be expanded upon with elements collected by the Adoption and Foster Care Analysis and Reporting System (AFCARS) and SACWIS.
Existing programs like the Lucas County Educational Initiative are rare in Ohio, and perhaps across the country. In 2009, this researcher and the Public Children Services Agencies of Ohio (PCSAO) an advocacy organization whose membership includes every public children service agency in Ohio collaborated to distribute a short questionnaire to all eighty-eight member counties. Among the questions asked was whether the counties had a program specifically designed to help children in foster care achieve in school. Although the response rate was very low, only LCCS and two other counties indicated that they did have such a program. Of those, only Lucas County had collected grade data from the schools in an aggregated form for its foster children (Kapcar, Theiss, Powell, & Parker, 2009).

In the current economic climate, most child welfare agencies are struggling to provide services with fewer funds. Many are cutting staff rather than adding new programs. Yet, it is a disservice to children not to provide them with the help and support they need to succeed in school. If more counties had programs to improve educational outcomes and consistent measurements were used, more data would be available to provide direction to local and federal policy-makers so that resources can be best targeted where they will be most effective.

The child welfare system is responsible to meet children’s needs for safety, permanency, and well being. Well-being incorporates include physical, social emotional and educational functioning. Educational well-being equates to human capital. Human capital theorists contend that individuals with certain skills and advantages gained through positive life experiences accumulate more human capital, and thus as adults are
more likely to be contributing members of society and less likely to add to societal costs by being incarcerated or unemployed (Heckman, 2001).

5.7 Future Research

In addition to research gaps discussed in preceding sections, future research could explore the influence of factors associated with resilience or a moderating effect on the potentiating factors identified in this research. For example, Testa, Nieto, and Fuller (2007) found that placement with at least one sibling significantly decreased non-permanency placement moves. Also significant was placement in a home with fewer unrelated children in the same home. Children over the age of 11 residing in regular foster homes with 3 or more unrelated children were at the highest risk of instability.

For human capital theorists, human development is stage-salient, rather than continuous. Stage-salient development implies that experiences and influences vary in their impact, both positive and negative, depending on the stage of life of the individual. Human capital theory suggests that because of the cumulative effect of strengths and weaknesses, investments in human capital early in life provide greater benefits than investments later in life (Wulczyn, 2008). Future research could expand on the findings in the present study, utilizing larger populations and more variables to test the relationships between compensatory and potentiating factors and the accumulation of human capital for children with differing individual factors in a longitudinal study. Findings could potentially help in the development of measureable and meaningful indicators of educational well-being to inform the federal child and family service reviews and to aid in future outcomes research.
Figure 11, borrowed from Wulczyn (2008), illustrates the hypothesis that the formation of human capital is a product of the balance between risk (potentiating) and protective (compensatory) factors. If compensatory factors outweigh potentiating ones, the child’s human capital would be expected to have an upward trajectory. If the reverse is true, the child would more likely struggle academically and in social-emotional functioning. Consistent with both ecological-transactional and human capital theories, the existence of potentiating factors would be expected to apply a downward pressure on academic performance, while compensatory factors push upward.

Further understanding is needed in relation to how racial minorities are impacted by educational barriers not only associated with status as a foster child, but also at the macro (policy) and mezzo (community) levels. What are the relationships between disproportionality in foster care and those variables associated with academic barriers
such as school mobility, mental health, academic service provision, and academic performance? As the body of research progresses and more is learned about effective interventions, the question could be asked; would the same supports and interventions that would be effective in helping children to succeed in school potentially reduce disproportionality and/or lead to a shorter stay in care for minority children who enter foster care? Do activities that lead to improvement in educational and social-emotional well-being also positively impact the federal safety and permanency measures?

Our children’s educational success impacts all aspects of our society. This is not just a problem for child welfare. The fields of neurodevelopment, education, mental health, and child welfare all hold pieces of the puzzle and should collaborate in practice and in their research efforts. To do so would optimize the utility of research findings through the sharing of data and practice knowledge in the different fields. Collaborations at the policy level should include the research of all the above, but also economists who can demonstrate the short and long-term benefits of investing in children and families. As stated by Yates (2007):

Future research must adopt interdisciplinary, integrative paradigms that can be readily translated to real-world practice with children and families. In addition to the adoption of a developmental psychopathology framework, there must be an appreciation for interdisciplinary collaborations at the level of funding agencies and professional evaluative networks.
5.8 Conclusion

This study examined outcomes for school aged children from 5 to 18 years old on a series of measures associated in previous research with not only educational well-being outcomes, but to a lesser extent, social-emotional well-being demonstrated to be associated with educational well-being. Maltreatment can impair cognitive functioning, but maladaptive behaviors may have a greater potential to jeopardize school success as well as placement stability and the potential to form new attachments and develop new skills. The school and foster care environments, by their reaction and interventions, can ameliorate or exacerbate the problems children are having as they adapt to school. Without identification and appropriate supports, they can be set on a track for failure, breeding anger, frustration, depression, and more failure. Or, they can experience success, breeding self-esteem and more success. It is hoped that the findings of this study help to inform practice, policy, and research to put foster children on the path to educational success, future self-sufficiency, and healthy adult functioning.
References


California Department of Education. 2008 Report to the Legislature and the Governor for the Foster Youth Services Program. Pursuant to California Education Code sections 42920-42925. available from the California Department of Education website. [www.cde.ca.gov/ls/pf/fy/](http://www.cde.ca.gov/ls/pf/fy/)
www.caseyfamilyprograms.org


the dismal science has to say about investing in children. Published by the
Rand Corporation. www.rand.org

Kortenkamp, K. & Ehrele, J. (January, 2002). The well-being of children involved
with the child welfare system: A national overview. Published by The Urban
Institute, Series B, No. B-43.

and the school-aged child: school performance consequences. Child Abuse &
Neglect, 17, 581-589.

Legal Center for Foster Care and Education: Blueprint for Success. Available from
www.abanet.org

Legal Center for Foster Care and Education (2008). Solving the Data Puzzle: The
How-to Guide to Collecting and Sharing Information to Improve Educational

Leiter, J. (2006). School performance trajectories after the advent of reported


34, 563-589.


www.americanhumane.org/about-us/who-we-are/history/mary-ellen


Pew Research Center. Pewresearch.org/


Treehouse Annual Report. (2008). Received on 6/17/08 by email from Lynn Welton, Education Program Manager, DSHS – Children’s Administration,, Olympia, WA.


