An Evaluative Study of the Academic Achievement of Homeschooled Students Versus Traditionally Schooled Students Attending a Catholic University

by
Marc Snyder

An Applied Dissertation Submitted to the
Abraham S. Fischler School of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova Southeastern University
2011

Approval Page

This applied dissertation was submitted by Marc Snyder under the direction of the persons listed below. It was submitted to the Abraham S. Fischler School of Education and approved in partial fulfillment of the requirements for the Degree of Doctor of Education at Nova Southeastern University.

Robert Hill, EdD Committee Chair	Date
Janet Perry, EdD Committee Member	Date
Program Professor Review Applied Research Center	Date
Ronald P. Kern, PhD Associate Dean	Date

Acknowledgments

First and foremost, I would like to thank God for giving me the ability, strength, and perseverance to complete this applied research study. None of this would have been possible without His help.

Next, I would like to thank my beautiful family, especially my wife Cynthia, for her unconditional love and support, and my two children, Isabela and Michael. Although they are too young to understand this accomplishment now, I know they will understand and be proud as they grow and mature. I would like to thank my mom, Neely, for giving me life, and my sister, Dori, for the unique bond that only a brother and sister can have. I would like to thank my father-in-law, Dr. Carlos Rossie, for his inspiration and encouragement and in a special way, I would like to thank my dad, Stan, who I know is proud of me and is my angel looking down on me from heaven.

I would also like to thank my dissertation chair, Dr. Robert Hill, for his invaluable comments, advice, and mentoring to me during this entire applied research process. His suggestions were always given with delicate care in the hope to make this dissertation the best possible. My committee member, Dr. Janet Perry, also provided extremely valuable feedback, and to her as well I am very grateful.

My gratitude also goes out to Dr. Dan Guernsey. He provided me with guidance in helping me choose my topic on homeschooling and assistance in helping me obtain all the necessary information needed to complete this study. In addition, I would like to thank Mrs. Casey Graham for her statistical input, which was extremely valuable to me. I also thank Ms. Jennifer Cook for her professional help in improving my work. Last, I would like to thank all my professors at Nova Southeastern University for their expertise and support in guiding me through all of my studies and academic work.

Abstract

An Evaluative Study of the Academic Achievement of Homeschooled Students Versus Traditionally Schooled Students Attending a Catholic University. Marc Snyder, 2011: Applied Dissertation. Nova Southeastern University, Abraham S. Fischler School of Education. ERIC Descriptors: Evaluation, Academic Achievement, Higher Education, Catholic Schools, Homeschooling

This applied dissertation was designed to provide a formal evaluation of the academic achievement of homeschooled students compared to traditionally schooled students attending a relatively young, Catholic university located in South Florida. As approximately 30% of the university's current student population has been homeschooled through high school, having more than just anecdotal evidence in regards to these students' academic achievement can be useful as the university grows and develops in targeting more students. Such data could prove vital for the future decision making of university administration and stakeholders and of use for all those interested in the homeschooling movement.

Homeschooling has shown tremendous growth in the United States over the past 30 years to 2 to 3 million. As the public educational system continues to face challenges, parents increasingly are becoming dissatisfied and choosing homeschooling as a viable option. As homeschooled students near high school graduation and consider attending college as the next step in their educational career, a couple of questions come to mind: Are homeschooled students prepared for the academic rigors of college? Once accepted into college, how do homeschooled students compare academically to traditionally schooled students in college?

Using archival data, the writer evaluated 408 students based on their 4-year secondary school type: 137 public-schooled students, 142 Catholic schooled, and 129 homeschooled. Equally weighted criteria were overall SAT or ACT scores, overall college grade-point average (GPA), GPA by major, and core GPA. A statistically significant difference was found between homeschooled students and traditionally schooled students in ACT and SAT scores and overall GPA, showing value to the institution.

Table of Contents

Page

Chapter 1: Introduction 1
- Statement of the Problem 1
- Description of the Setting 9
- Definition of Terms 10
- Purpose of the Study 11

Chapter 2: Literature Review 13
- Overview 13
- Brief History of Homeschooling 14
- Homeschooling Methodologies 17
- Sources of Curriculum or Books 26
- Parents' Legal Rights to Homeschool Their Children 26
- Criticisms of Homeschooling 33
- Homeschoolers off to College 35
- Catholic Education 42
- Academic Achievement of Homeschoolers in College 47
- The Question of Socialization 62
- Summary and Conclusion 67
- Research Questions 69

Chapter 3: Methodology 71
- Participants 71
- Instrument and Variables 72
- Procedures 75

Chapter 4: Results 83
- Descriptive Results of the Evaluation 84
- Inferential Results of the Evaluation 95
- Research Question 1 96
- Research Question 2 97
- Research Question 3 99
- Research Question 4 100
- Research Question 5 101
- Summary 101

Chapter 5: Discussion 104
- Overview of the Applied Dissertation 104
- Discussion of Results 105
- Conclusion 110
- Implications of Findings 112
- Limitations 113
- Recommendations for Future Research 115

References 117

Appendices

A Demographic Information 129
B ACT Composite Scores: Frequency Table 131
C SAT Total Scores: Frequency Table 133
D Overall GPA: Frequency Table 135
E Major GPA: Frequency Table 137
F Core GPA: Frequency Table 139

Tables

1 Rubric for Determining Relative Value of Homeschooled Students 82
2 Descriptive Statistics for ACT Composite Score by School Type 86
3 Distribution of ACT Scores for All Students 86
4 Descriptive Statistics for SAT Total Score by School Type 88
5 Distribution of SAT Scores for All Students 88
6 Descriptive Statistics for Overall Grade-Point Average by School Type 90
7 Distribution of Overall Grade-Point Average (GPA) for All Students 90
8 Mean Overall Grade-Point Average by Class Level and Secondary School Type 92
9 Descriptive Statistics for Major Grade-Point Average by School Type 92
10 Distribution of Major Grade-Point Average (GPA) for All Students 93
11 Descriptive Statistics for Core Grade-Point Average (GPA) by School Type 95
12 Distribution of Core Grade-Point Average (GPA) for All Students 95
13 Independent-Samples *t*-Test Results for ACT Composite Score by School Type 97
14 Independent-Samples *t*-Test Results for SAT Score by School Type 98
15 Independent-Samples *t*-Test Results for Overall Grade-Point Average by School Type 98
16 Independent-Samples *t*-Test Results for Overall Grade-Point Average by School Type and Class Level 99
17 Independent-Samples *t*-Test Results for Major Grade-Point Average by School Type 100
18 Independent-Samples *t*-Test Results for Core Grade-Point Average by School Type 100

Figures

1 Histogram of ACT Composite Scores by Secondary School Type 87
2 Histogram of SAT Composite Scores by Secondary School Type 89
3 Histogram of Overall Grade-Point Average (GPA) by Secondary School Type 91
4 Histogram of College-Major Grade-Point Average (GPA) by Secondary School Type 94
5 Histogram of Core-Curriculum Grade-Point Average (GPA) by Secondary School Type 96

Chapter 1: Introduction

Statement of the Problem

Rise in homeschooling. With the clear erosion of the U.S. educational system (National Commission on Excellence in Education, 1983), homeschooling has experienced a burgeoning increase. Data collected from the National Center for Education Statistics (NCES, 2009) estimated that 1.5 million students in kindergarten through Grade 12 (K-12) were homeschooled in the United States in 2007. This represents an increase from an estimated 1.1 million homeschooled students in 2003 and 850,000 homeschooled students in 1999. Moreover, the percentage of homeschooled students nationwide increased from 2.2% in 2003 to 2.9% in 2007 (NCES, 2009). In Florida, the fourth-largest state, according to the Florida Department of Education's (2009) annual report on homeschooling, the number of homeschooled students in Florida increased from 37,196 in 2000 to 60,913 in 2009. This indicates almost a doubling in the number of homeschooled students in Florida alone in less than 10 years. Virginia and Maryland have experienced a similar increase in the number of homeschoolers. Virginia's homeschooling population increased from 3,816 registered homeschoolers in 1990 to 20,694 in 2007, and Maryland's homeschooling population increased from 2,296 in 1990 to 24,227 in 2006 (Gaither, 2009).

In spite of the already large, national percentage of homeschooled students, many homeschool leaders expect this number to continue to grow. Researchers from the National Home Education Research Institute (Lips & Feinberg, 2008) predicted that the number of homeschooled students will continue to grow 7-12 % per year. According to Lips and Feinberg (2008), the current estimate of 1.5 million homeschooled students already may be too low. As mentioned above, estimates were determined by the NCES

(2003) via a national survey. As many households often do not respond to surveys, a more accurate estimate of the number of homeschooled students is most likely closer to 2 million or more (Lips & Feinberg, 2008). The tremendous rise in the number of homeschooled students clearly makes homeschooling one of fastest growing educational movements when compared to public or private school education (Ray, 2004b). The growth in homeschooling is not likely to slow in the near future, although some states, such as Pennsylvania, have experienced a tapering off and even a slight decline in the number of reported homeschoolers over the last few years—a decline of 3.3% from 2003 to 2004 (Gaither, 2009).

Homeschooling populations. Increased numbers of homeschoolers have led to a heterogeneous homeschooling population. White students still account for the majority (77%) of homeschoolers (NCES, 2009). However, minority homeschooled students, especially Black students, have benefited from parental-choice options extended as a result of the accountability measures included in the federal No Child Left Behind Act (Fields-Smith & Williams, 2009). The NCES (2009) reported that in 2007, 4.0% of homeschoolers were Black; this percentage, however, is rising. According to the Home School Legal Defense Association (HSLDA, as cited in Gaither, 2009), the homeschool movement is growing faster among Black households than among the general homeschool population. This growth, however, can also be seen among other ethnic and religious groups. The number of Native American homeschooling groups has been on the rise, in addition to the number of groups among Hawaiian natives, Muslims, Catholics, Mormons, orthodox Jews, atheists, conservatives, and liberals (Gaither, 2009; Ray, 2009a).

Further statistics of homeschooling populations revealed that students in two-

parent households accounted for 89% of the homeschool population, and 54% of this population had one parent in the workforce (NCES, 2009). According to the NCES (2009), students in households whose parents earned more than $75,000 per year had a higher rate of homeschooling (33%) than students in households whose parents earned $50,001 to $75,000 per year (26%), $25,001 to $50,000 per year (24%), or less than $25,000 per year (16%). Regarding the number of children in the household, 60% had three or more children, 27% percent had two children, and only 13% had one child (NCES, 2009). Female and male students were approximately equally represented. Parents' education included 50% with a bachelor's and graduate or professional degrees and 50% with some college experience and at least a high school diploma (NCES, 2009). Moreover, the type of homeschooling taught in the home varies from the use of a very structured curriculum to little or no planned instruction (Ray, 2004b).

Reasons for homeschooling. Educational researchers Van Galen and Pittman (as cited in Lyman, 1988b) recognized that homeschooling families can be placed into two categories based on why they choose to homeschool: ideologues and pedagogues. Ideologues are often viewed as the religious fundamentalists (conservatives), or those belonging to the countercultural right-wing movement (Gaither, 2008). Their motive for homeschooling is the protection and promotion of religious doctrine and "a conservative political/social agenda" (Luke, 2003, para. 8). Consequently, they reject the idea of their children being indoctrinated with liberal values or taught any other ideas not their own. Initially concerned with content, ideologues have come to embrace homeschooling as a sort of "religious mission" appointed to them by God and consider any attempt to undermine the right to homeschooling as an attack on Christianity and the family itself (Luke, 2003, para. 8).

On the other hand, pedagogues, or those belonging to the countercultural left, or liberals (Gaither, 2008), are not concerned with the content being taught in schools but with how it is taught (Higgins, 2008). Pedagogues value educational independence and are interested in educating their children outside the confines of the educational school system, which is, according to them, highly bureaucratized and has ultimately failed to meet their children's needs (Luke, 2003). Much of the pedagogue ideology has its roots in the work of John Holt, whose name has become synonymous with the term *unschooling*. Unschooling—also known as *natural learning, experienced-based learning,* or *independent learning*—is a way of looking at children and life. It adheres to the premise that it is within the nature of children to pursue knowledge from their early years of life and to continue this pursuit if left unhindered by formal school (Stevens, 1994).

According to Nemer (2002), Van Galen and Pitman's breakdown of homeschoolers into ideologues and pedagogues, although useful to some extent, failed to capture the diversity of homeschoolers today and the many reasons they choose homeschooling. Rarely do homeschoolers fit neatly into either category; many fit into both. According to a survey conducted by the NCES (2009) in 2007, among the most important reasons given by parents for choosing to homeschool their children included providing religious and moral instruction (36% of parents); concern about the school environment, such as safety, drugs, or negative peer pressure (21%); dissatisfaction with academic instruction (17%); and other reasons, such as travel, finances, and distance (14%). Additionally, 7% wanted to give their children a nontraditional education, 4% had a child with special needs, and 2% had a child with a physical or mental handicap (numbers do not add up to 100% due to rounding). Additional reasons included parents' wanting to be more involved in their child's education (Green & Dempsey, 2007), citing

that they know their own child best (Marrin, 1997), and just wanting to experience more family togetherness (Brown, 1997).

The topic. Due to the decentralized nature of homeschooling populations, attaining information on various outcome measures, such as academic achievement, remains a challenge (Lips & Feinberg, 2009). However, the studies conducted on the academic achievement of homeschooled students have shown that these students fare as well as, if not better than, traditionally schooled students (Ray, 2004b). For example, in a landmark U.S. national study, Rudner (1999) administered academic achievement tests to 20,760 homeschooled, K-12 students. Results showed that homeschooled students' achievement-test scores were significantly higher than those of their public- and private-school counterparts. Furthermore, 25% of homeschooled students were enrolled one or more grades above their age-level peers when compared to public or private schools, and students who had been homeschooled their entire lives scored even higher academically on achievement tests when compared to students enrolled in any other educational program. It is important to keep in mind, however, that homeschooled students are typically not an accurate cross-section of the U.S. population.

Clemente (2006) conducted a study to determine if there was a statistically significant difference in the academic achievement and college aptitude of home-educated high school seniors compared to traditionally schooled students who subsequently attended Christian colleges. The SAT® was used as a measure for this purpose. Records obtained from each school type included 1,792 public, 945 private, and 222 homeschooled, yielding a total 2,959 test scores. Clemente's results indicated that the homeschooled students' mean test score on the SAT (including verbal and mathematics sections) was 1123, whereas private-educated and public-school students averaged 1054

and 1039, respectively. Tests used for analyzing the data revealed a significant difference in homeschool students' SAT test scores when compared to their conventional school counterparts. Even though studies such as Clemente's do not prove causation, there is little doubt that homeschool parents are capable of providing a good education for their children.

The research problem. Study after study has indicated that homeschooled students perform as well as, if not better than, traditionally schooled students in K-12 academics; however, there remains a general paucity of literature on the academic achievement of homeschooled students in higher education (Saunders, 2006). Moreover, the research on the academic achievement of homeschooled students in higher education has focused solely on students attending non-Catholic colleges and universities, either public or private. No research has been done—to the writer's knowledge—on the academic achievement of homeschooled students attending a Catholic college or university. At the writer's place of work, a Catholic university, according to the university's factbook, the homeschooling population is approximately one third of its overall population; yet, only anecdotal evidence exists regarding their academic outcomes. The university is new and has not conducted any research on this large body of students. Thus, the fundamental research problem this applied dissertation addressed was the knowledge deficit regarding the academic achievement of homeschooled students compared to traditionally schooled students attending this university. Without any formal evaluation, university leaders did not know if the university was meeting the academic needs of a significant percentage of its student body. Moreover, in a small, private institution, such as the writer's university, student retention is of principal importance.

Background and justification. The main barrier to gaining knowledge of

homeschoolers is the lack of data. According to Isenberg (2007), there are only two sources of homeschooling data: state-administrative data sets and national cross-sectional surveys. State-administrative data sets provide information for a large sample of homeschooled students but are considerably flawed. Data collection is typically done haphazardly, alternate legal forms of homeschooling cloak homeschoolers under the veil of private schooling, and underground homeschooling shields homeschoolers from state knowledge. Data collected via national cross-sectional surveys, such as the National Household Education Survey, obtain a significant amount of demographic information on homeschooling. The only way to capture academic achievement information, however, is to compare SAT scores of homeschoolers and traditionally schooled students. The problem with this method is that many homeschoolers transfer to a traditional school before these data can be collected. In addition, students who take the SAT are a self-selected group. These facts make it difficult to accurately discern the academic achievement of homeschooled students.

Furthermore, according to Lawrence (2007), surveys conducted by the National Household Education Survey are typically subject to two types of errors: sampling and nonsampling. Sources of nonsampling errors include, but are not limited to, items that are not responded to, the differences in the way respondents interpret the meaning of the questions, mistakes made in interpreting the data, the tendency for respondents to give answers that are deemed socially desirable, and differences in responses due to the time the survey was conducted.

Moreover, nonsampling error, and the bias caused by it, is often difficult to identify. Sampling errors often result when a sample chosen is not representative of the entire population. For example, the National Household Education Survey conducted on

a sample of households with telephones might or might not be representative of all households with telephones. This is not to mention the failure to capture the approximately 5% of U.S. households in 2000 that did not have telephones (Lawrence, 2007).

With regards to college academic achievement, as noted by Cogan (2010), little is known about homeschoolers' academic outcomes in higher education, especially in private colleges and universities. This is because many of these schools are not required to participate in reporting to the Integrated Postsecondary Education Data System, as they do not receive federal funding. For example, Patrick Henry College, located in Virginia, is a Christian, conservative college that has a homeschooling population of 85% of its overall population. Nevertheless, little is known about how homeschoolers perform academically at this institution because it does not participate in reporting to the Integrated Postsecondary Education Data System. The same thing can be said about other private colleges and universities. Little is known about the academic achievement of homeschoolers attending these institutions because of lack of research and nonrequired reporting to the Integrated Postsecondary Education Data System. As many homeschoolers tend to gravitate towards these homeschooler-friendly schools, further research is warranted.

Deficiencies in the evidence. Although the literature contains some research on the academic achievement of homeschooled students in both public and private colleges and universities (e.g., Cogan, 2010; Galloway, 1995; Gray, 1998; Holder, 2001; Jenkins, 1998; Jones & Gloeckner, 2004a, 2004b; Ray, 2004b; Ray & Eagleson, 2008; Rudner, 1999; Sutton & Galloway, 2000; Wichers, 2001), there is a complete literature void on the academic achievement of homeschooled students attending Catholic colleges and

universities. Due to this knowledge deficiency and because academic achievement is often an important component of accreditation, a study such as this would be beneficial to a new Catholic university seeking either initial accreditation or reaffirmation of its accreditation. Thus, the purpose of this study was not only to add to the literature on the academic achievement of homeschooled students attending college but also to provide the writer's university (a Catholic university) research knowledge on the academic achievement of a major portion of its student body: the homeschooled student.

Audience. The primary audience for this study includes students, parents, faculty and staff, and all administrative personnel at the writer's university. With a more thorough and complete understanding of a significant portion of its student body—the homeschooled student—university leaders consequently would have a better understanding of the university's constituency. In addition, an applied research study such as this would equip university admissions personnel with concrete data when recruiting homeschooled students locally, nationally, and abroad. Moreover, inferences and generalizations can be made from this study and may or may not be used by admission counselors in other Catholic colleges and universities or non-Catholic, private or public, 2- or 4-year colleges and universities as further evidence of whether homeschooled students are prepared for college and able to compete academically at high levels when compared to traditionally schooled students. This study also should be of interest to all those involved in the homeschooling movement in general.

Description of the Setting

The institution that was used for this study was a private, liberal arts, Catholic university located in South Florida. According to the university's website, the university, founded in faithfulness to Christ and the teachings of the Catholic Church, upholds as its

mission

> the sponsorship of a liberal arts education curriculum dedicated, as articulated in the apostolic constitution Ex Corde Ecclesiae, to the advancement of human culture, the promotion of dialogue between faith and reason, the formation of men and women in the intellectual and moral virtues of the Catholic faith, and to the development of professional and pre-professional programs in response to local and societal needs.

The university opened its doors in 2003 with an initial enrollment of 101 students—21 from Florida and 80 from 33 other states. Its initial campus was located in Ypsilanti, Michigan, prior to moving to South Florida. The town is centered around a cathedral-like oratory and the first Catholic university to be built in the United States in nearly 50 years (Allen-Mills, 2006). According to the university's website, as of 2008, the university had enrolled 589 undergraduate students from all 50 states and 29 countries. Including its campuses in Rome, Italy, and San Marcos, Nicaragua, and its master's and doctoral students, the university's student enrollment exceeds 1,100. As per the university's website, the university offers 4-year Bachelor of Arts degrees in a variety of majors in addition to a Master of Arts and Ph.D. in Theology. Moreover, in 2009, the University's School of Law moved from Michigan to South Florida, with an enrollment of 375 students.

Definition of Terms

Academic achievement. For the purpose of this study, academic achievement is defined as "the demonstration of learning (including, knowledge, understanding, and thinking skills) attained by a student as measured by standardized academic achievement tests" (Ray, 2000, p. 78), such as the SAT or ACT® test and student overall grade-point average (GPA).

ACT. "The ACT test assesses high school students' general educational

development and their ability to complete college-level work" (ACT, 2011, para. 1). It consists of English, reading, mathematics, and science tests.

Catholic school. A Catholic school is a parochial school maintained by the Catholic Church. The definition of a Catholic school is rooted in the general definition of a school: "a privileged place in which, through a living encounter with a cultural inheritance, integral formation occurs" (Sacred Congregation for Catholic Education, 1977, para. 26).

Core grade-point average (GPA). According to the study university's website, core GPA is the GPA attained by students in half, or the first 64 credits, of the students' overall undergraduate education.

Grade-point average (GPA). GPA is "the average obtained by dividing the total number of grade points earned by the total number of credits attempted" ("Grade-Point Average," 2010).

Homeschooling. Homeschooling is defined as "the education of school-aged children at home rather than school" (Lyman, 1998b, p. 64).

Public school. A public school, for the purposes of this study, is "an elementary or secondary school in the U.S. supported by public funds and providing free education for children of a community or district" (Clemente, 2006, p. 10).

SAT. The College Entrance Examination Board's SAT is a commonly used achievement test designed to "measure critical reading, math, and writing skills" for college admission (Educational Testing Service, 2010, para. 34).

Purpose of the Study

The purpose of this study was to evaluate the academic achievement of homeschooled students compared to traditionally schooled students (public and Catholic

school) enrolled in a Catholic university. Academic achievement was measured by students' SAT and ACT scores, overall college GPA, GPA by major, and core GPA. Data collected would be used to either support or refute anecdotal evidence regarding the academic achievement of homeschooled students at the writer's university. For this study, the writer used a correlational design.

Chapter 2: Literature Review

Overview

Homeschooling, as an educational and social trend, is one of the most significant movements to have arisen in the past 50 years (Lines, 2000). According to Lines (2000), this trend has gained increased acceptance from the general U.S. public. In 1980, only 16% of Americans polled thought homeschooling was a "good thing." By 1997, the approval rating rose to 36% (Lines, 2000). In the eyes of many, homeschooling is seen as a viable alternative to public and private school education as administrators and educators struggle to fix many problems (Nelson, Pawlas, & Mintz, 1998). One problem typically not present in K-12 homeschooling is a deficiency in academic achievement. According to Ray (2009b), K-12 homeschooled students tend to score 15-30 percentile points higher than their public school counterparts, who average in the 50th percentile on standardized achievement tests. High achievement is regardless of parental educational background, family income, whether or not parents are certified, or the degree of state control and regulations on homeschooling (Ray, 2000). As a result of high academic achievement, homeschoolers are now being actively pursued by many prestigious colleges and universities, such as Yale, Princeton, and Harvard (Wasley, 2007). Yet, questions regarding their ability to handle the academic rigors and social challenges of college still remain unanswered (Reindl, 2005).

The top myth of homeschooled students is that they lack the fundamental social skills needed to function normally in higher education and society. According to Romanowski (2006), the socialization myth stems from the misinformed stereotype that homeschoolers wake up at 9:00 in the morning, hit the books until 4:00, and stay locked in their homes with little or no interaction with the outside world. This, however, is not

true. Homeschoolers participate in a range of activities, including volunteer work, classes outside the home, group sports, Sunday school, and so on (HSLDA, 2001). “Yes, there are some homeschooled students who are social misfits, but there are public school students who [also] lack adequate social skills” (Romanowski, 2006, p. 125).

The focus of this study, however, was limited specifically to the academic achievement of homeschooled students attending college. The examination of literature in this study includes a brief history of homeschooling, followed by a review of homeschooling methodologies and parents’ legal rights to homeschooling, some of the criticisms of homeschooling, college admission officers’ perceptions of and policies for homeschooling admissions (including homeschoolers’ transitional experiences to college), Catholic higher education, the academic achievement of homeschoolers in college with a focus on standardized achievement-test scores (SAT and ACT) and overall GPA, and the question of socialization. The writer concludes this literature review with research questions aimed at answering the fundamental question: How do homeschooled students fare academically when compared to traditionally schooled students attending a Catholic university?

Brief History of Homeschooling

The concept of homeschooling is certainly not a new idea to American education, with the first colonists homeschooling their children out of necessity (Wilhelm & Firmin, 2009). However, the history of modern homeschooling can be traced back to the 1960s and 1970s as a reactionary response by religious fundamentalists (ideologues from the countercultural right) and experimental unschoolers (pedagogues from the countercultural left) to the perceived inadequacies of the public school educational system (Aurini & Davies, 2005; Gaither, 2008). Emerging as the representative of the countercultural left’s

disappointment with public school pedagogy was John Holt (Knowles, Marlow, & Muchmore, 1992). Holder (2001) explained that Holt, a fifth-grade teacher himself, maintained that children naturally like to learn and that forcing them to learn stifles their creativity and initiative. Holt (1964) posited that children are most likely to fail school for the following three reasons: fear, boredom, and confusion. They fail for fear of disappointing their teachers, boredom because the curriculum is irrelevant to their lives, and confusion because the curriculum is understandably difficult (Costly, 2006). In 1967, Holt affirmed the independence of child learning. According to Holt (1967), children learn best not because they are compelled to do so by those in authority, but because of their own personal interests and curiosity. For Holt, children ought to be in control of their learning; children learn best when they decide what it is they want to learn and how to go about learning it.

After working extensively to reform schools from within the educational system, Holt realized that schools could not be reformed as he envisioned. He quit teaching and focused his energies on the alternatives to conventional schooling by disseminating his views in a bimonthly magazine created in 1977 called *Growing Without Schooling*, creating the homeschooling movement (Holt, 1981). For the followers of Holt's ideology, homeschooling became synonymous with unschooling. What became important was not that the home was a better school than a traditional school, but that the home was not a school at all (Holt, 1981). Holt's (1976) support of homeschooling (unschooling) and his disgust with traditional schooling were made explicit when he said, "Meanwhile, education—compulsory schooling, compulsory learning—is a tyranny and crime against the human mind and spirit" (p. 222).

Another pioneer of modern homeschooling was Raymond Moore (as cited in

Lyman, 1998a). According to Lyman (1998a), Moore, a former U.S. Department of Education employee and doctor of education, set out to answer two fundamental questions: "Is institutionalizing young children a sound, educational trend, and what is the best timing for entrance?" (p. 6). After speaking with over 100 family-development specialists and analyzing thousands of studies, Moore (and his wife, Dorothy) concluded that despite children's eagerness to enter formal schooling (at ages 4, 5, 6, and so on), they quickly become bored and tired of school before they are out of the third and fourth grades (Moore, n.d.). More importantly, according to Moore (n.d.), the child's nervous system is not fully matured until the ages of 8 and 9. Their vision, hearing, and other senses are not ready to handle the rigors of formal schooling. As a result, permanent damage to a child's eyes can be done before the age of 12. Moore's findings on the benefits of delayed schooling led to an interest in homeschooling. Due to Moore's Christian background, he drew a sizable following of Christians, but his message was well received by people from many different faith backgrounds.

Ironic to the heavy Protestant influence of early public education, the major religious (ideological) exodus from public schooling to homeschooling came from Protestants in the mid-1960s and 1970s. Anecdotally, Carper (2000) attributed the decline in American Protestantism to, among other things, "Darwinism, higher criticism of the Bible, the fundamentalist-modernist controversy, and growing cultural and religious diversity" (p. 15). Supreme Court decisions in *Abington Township v. Schempp* in 1963, *Engel v. Vitale* in 1962, and *Murray v. Curlett* in 1963 (as cited in Wilhelm & Firmin, 2009) to remove prayer and Bible readings from public schools marked only the culmination of the already growing half-century movement of public school de-Protestantization.

At the same time, strong movements were being made by the Court regarding desegregation (e.g., *Brown v. Board of Education,* 1954). In the early 1960s, in response to desegregation, many conservative Protestants were appalled by the fact that while many minorities were allowed into schools, God was left out (Gaither, 2008). Also during this period, within public schools, there was a shift away from absolutism to a new *values clarification*, which taught students to overcome the ethical confusion of moral absolutes by applying a process of *valuing* (Wilhelm & Firmin, 2009). Awakening to the public-school rejection of prayer and the Bible and the advancement of desegregation, secular humanism, and moral relativism, Carper (2000) related, Protestants reacted in several ways. Some tried to reform the schools from within; others responded by withdrawing their children from public schools and forming their own independent, Christian schools; and still others responded by abandoning institutional education altogether for homeschooling in an attempt to restore education to its purest form: a parent teaching a child at home. This phenomenon is now embraced by people not only in the United States but also all over the world (McIntyre-Bhatty, 2007).

Homeschooling Methodologies

Within the educational movement of homeschooling, parents employ a variety of homeschooling pedagogies (McKeon, 2007). According to McKeon (2007), these pedagogies can be found on a large continuum ranging from traditional instructional pedagogies used in school to more relaxed approaches that respect the "exploration of the child's creative ability" (p. 35). Some of the most popular homeschooling methodologies include (a) traditional textbook, (b) classical education, (c) Charlotte Mason, (d) Montessori, (e) eclectic homeschooling, (f) Moore formula, (g) unschooling, and (h) Catholic homeschooling (Home School Learning Network [HSLN], 2007). The following

paragraphs explore the literature and give a brief synopsis explaining the philosophy behind each of these homeschooling methodologies.

Traditional textbook homeschooling. Traditional textbook homeschooling is the type of homeschooling that most closely resembles traditional education in a classroom (HSLN, 2007). It is the most common form of homeschooling used today (McKeon, 2007). Sometimes referred to as structured homeschooling or the scope and sequence approach, the traditional textbook method, according to the HSLN (2007), views the entire body of knowledge to be learned (scope) and divides it into discrete learning units, or grade levels (sequence). It can be likened to going to school at home. Moreover, in the traditional textbook approach to homeschooling, much like in a traditional school, the child works on every subject (language arts, math, history, science, etc.) each day using textbooks, which are often part of a particular curriculum. These textbooks—accompanied by teacher manuals for parents—also come with premade tests that students take at the end of a chapter to assess for learning mastery.

Most traditional textbook homeschoolers have a daily routine, following a schedule that often runs from Monday through Friday, as well as September through June. Many parents like this educational approach to homeschooling because it provides a "preplanned, structured curriculum so they have something to fall back on" and removes any worries of homeschooling (HSLN, 2007, para. 3). This method is usually common for the 1st year or 2 of homeschooling as parents build up their confidence and sharpen their homeschooling skills ("Traditional Homeschooling Method," n.d.).

Classical education. Classical homeschooling education is based on the philosophical assumption, espoused by ancients, that the brain develops in three distinct cognitive stages—the grammar stage, the logic stage, and the rhetoric stage. This three-

part training of the mind is known as the *trivium*. This word is derived from the Latin words *tri*, which means "three," and *via*, which means "way." The word *trivium* literally means "three-part way" (Classical Christian Homeschooling, n.d., para. 1). It should not be confused with the trivium subjects (grammar, logic, and rhetoric) or the quadrivium subjects of (a) arithmetic, (b) geometry, (c) music, and (d) astronomy (Fideler, 1996). According to Wise-Bauer and Wise (2004), classical education is viewed as important for the following three reasons:

1. It is language-focused. It focuses on the use of words rather than images, which forces the mind to be active as opposed to passive.

2. Classical education is developmentally appropriate for the intellect, following the specific three-part pattern of the trivium.

3. All knowledge is interrelated for the classically trained mind. No subject is studied in isolation.

Moreover, classical education pursues absolute truth and thus avoids the relativistic threats of multiculturism, which sees truth as culture based and subject to change (Brice, 2008). Furthermore, classical (homeschooling) education uses three repetitions of the following four periods of history as its organizing outline: (a) the ancients (5000 B.C.-A.D. 400), (b) the medieval period through the early Renaissance (400-1600), (c) the late Renaissance through early modern times (1600-1850), and (d) modern times (1850-present). The classically trained child studies these four time periods at varying levels—adaptations of original classical works in Grades 1-4, simple original works in Grades 5-8 (where work becomes more difficult), and more complex original works in Grades 9-12 (Wise-Bauer & Wise, 2004). Students in Grades 9-12 are also given the freedom to pursue particular elective interests (music, art, medicine, etc.).

In the grammar stage (Grades 1- 4), also known as the poll-parrot stage, 4 years are spent memorizing facts: rules of phonics, grammar, poems, mathematics, stories of literature and history, scientific facts, and so on (Wise-Bauer & Wise, 2004). Memorization, for children, is not drudgery for them. As a matter of fact, they enjoy it; it comes quite naturally to them. From the moment children are born, and throughout their elementary years, they are drawn towards repeating things (like a young child who repeats his or her mother's words). Cognitively speaking, children in the grammar stage "automatically zero in on the concrete facts. Therefore, it is fine at this stage to concentrate on the concrete and leave the analytical and the abstract out of it" (Classical Christian Homeschooling, n.d., para. 5).

The grammar stage paves the way for the next stage of learning—the logic stage. In the logic (dialectic) stage (typically Grades 5-8), also known as the pert stage, the child's mind has moved from the rote memorization of facts to the ability to think more abstractly (Wise-Bauer & Wise, 2004). During these years, cognitive skills shift from the concrete to the analytical and inquisitive. For example, the child begins to ask, "Why?" The child pays close attention to cause and effect—the relationship between subjects and the way facts fit together becomes of more importance—and takes great joy in trying to "trip up" the teacher. In the logic stage, the child learns logic and begins to apply logic to all subjects (Wise-Bauer & Wise, 2004). Learning the science of logic is critical at this stage because it gives the child the tools to "question accurately and arrive at valid conclusions" (Classical Christian Homeschooling, n.d., para. 7).

In the final stage of classical education, the rhetoric stage (Grades 9-12), also known as the poetic stage or the difficult age, builds on the previous two stages of knowledge and logic. Whereas in the grammar stage children are taught facts and in the

logic stage children learn to think abstractly, in the rhetoric stage a child's "abstract thought reaches its zenith" (Classical Christian Homeschooling, n.d., para. 8). According to Sayers (1947), students in the rhetoric stage are self-centered; they thrive on being misunderstood and seek independence. Moreover, rhetoric students possess a burning desire to express themselves. In the rhetoric stage, the student applies the rules of grammar and logic to self-express in clear, convincing, and beautiful language (Wise-Bauer & Wise, 2004). During the rhetoric stage, the student also begins to specialize in particular interests, such as mathematic, literature, science, and art.

Charlotte Mason. The Charlotte Mason method, developed by the British educator Charlotte Mason, places special emphasis on the education of the child as a whole person through the use of living books, or "classical literature books in which children can identify easily with 'real-life' type characters" (Saunders, 2006, p. 13). Her method centers on the philosophical assumption that education is three-pronged: "Education is an Atmosphere, a Discipline, and Life" (Simply Charlotte Mason, 2010, para. 1). Mason maintained that a child absorbs a lot from his or her environment. The environment makes up one third of the child's education. Moreover, it is the role of education to create a disciplined child in the area of good habits. This is another third of the child's education. The last third of education is life, which applies to academics. For example, Mason maintained that students should be taught by life and not by the dry facts found in a textbook (Simply Charlotte Mason, 2010). Spending time outdoors learning from nature offers a child more than reading about nature from a science textbook. Her methods are used by many in homeschooling today (Simply Charlotte Mason, 2010).

Montessori. Another pioneer in the early-childhood homeschooling movement was Maria Montessori. Montessori was born in Italy in 1870. Her work with a group of

60 young children of working parents led her to open the first Casa dei Bambini, or Children's House, in Rome in 1907 (American Montessori Society, 2010). The opening of the first Montessori school put into practice her ideas (based on observation and experimentation) that the teacher ought to be the scientific observer in the classroom, the importance of carefully crafted materials for sensory learning, and the importance of a carefully prepared environment as a catalyst for learning (Weinberg, 2009). The prepared environment stems from the belief that education begins at birth and that the young child enters certain sensitive periods in which he or she shows interest in learning. The child's environment provides freedom to explore, discover, pursue the child's own interests (as opposed to being told what to do), and proceed at an individual pace of learning without interruption. In Montessori, it is not uncommon for a child to continuously repeat an activity. According to Montessori (1985), education should be understood more in the psychological assistance of the child than in the sense of teaching.

The Montessori method is meant to develop the whole person of the child, with education usually occurring across various age levels, as opposed to being age-level specific, which is how most traditional schools function (Soundy, 2009). By a carefully constructed child-sized environment and by removing obstacles that may hinder the growth and development of the child, the child is able to blossom into an independent learner (Soundy, 2009). The child is taught to take care of himself or herself as opposed to having things done for him or her. For Montessori, the primary goal of the educational environment is to assist the child in becoming independent of the adult (Peters, 2009). In this regard, Montessori education does not seem too far removed from the philosophy of classical education. Montessori allows children to explore subjects of interest on their own, which provides them with the opportunity to reach their full potential. Children are

not taught a specific body of knowledge that they must master; however, they are introduced to a broad-based curriculum that provides the platform for further learning (Montessori Method, n.d.).

Eclectic homeschooling. Eclectic homeschooling uses a mix of homeschooling approaches decided upon by the parents (HSLN, 2007). This method is a more relaxed type of homeschooling; its method can range anywhere from unschooling to a more traditional homeschooling setting (McKeon, 2007). According to the HSLN (2007), parents pick and choose from various curricula and put together a learning experience that is best suited for their child's needs. No single curriculum is permanently chosen, although usually one set curriculum is chosen as the foundation for the child's education. Academic subjects are learned, but no textbook encompasses all that is to be learned by the child. Supplementing textbooks are trips to the museum, library, and nature walks (HSLN, 2007). The main philosophy of eclectic homeschooling is that children, ultimately, need the freedom to explore their individual interests and that they cannot be pigeonholed into any one-size-fits-all, set curriculum.

Moore formula. The Moore formula for homeschooling was created in the 1980s by Raymond and Dorothy Moore, both considered to be the founders of Christian homeschooling education (HSLN, 2007). As previously stated, according to the HSLN (2007), the Moores maintained that formal education for the child should not begin until the ages of 8-10. Prior to this time, informal education should take place according to the child's own developmental readiness, with specialized attention being given to boys. According to Moore Homeschooling (2007), the Moore formula can be summarized based on the following three tenets: (a) study, (b) manual work, and (c) home or community service. In regards to study, children ought not to be forced to study for a

predefined amount of time each day (or before they are ready); the amount of time that they study each day should be commensurate with their maturity. Much like unschooling, the interests of the child should guide his or her own learning. Effort should be made to avoid textbook learning at all cost. Moreover, manual work should take place as much as study. Work builds self-confidence and allows for the child to mature rapidly and naturally. Work can be home based. Children should be encouraged to become entrepreneurial by baking and selling cookies or bread, mowing lawns, and so on. With regards to service, children ought to serve the needs of others at home or by visiting their neighbors, nursing homes, hospitals, or other types of service. This is Moore's Golden Rule (Moore Homeschooling, 2007).

Unschooling. The term *unschooling*, often used synonymously with *homeschooling,* was first coined and popularized in the 1970s by its founder John Holt (Davis, 2006; Martin, 2002). It was Holt's disenchantment with the public school system that prompted him (and many other parents) to turn to homeschooling (Lyman, 1998a). According to the Family Unschoolers Network (2006), the purpose of unschooling is to promote a natural curiosity and lifelong love for learning within the child that is entirely child led. In other words, the child entirely drives the learning. The parents' job is to present the child with a variety of educational experiences, and the child chooses what he or she wants to learn because of interest (Saunders, 2006). For example, as cited in Davis (2006), a child may be interested in dinosaurs and spend weeks at a time studying them (going to the library to check out books, going to the museum to look at dinosaur fossils, and so on). The unschooling advocate does not believe that a child should shift from subjects of interest (such as dinosaurs) to a subject of disinterest (such as math) just because it is deemed time to do so. It is the unschooler advocate's frame of mind that a

child will learn those less-liked subjects when he or she is ready. According to Jane Powell (as cited in Davis, 2006), her child learned to read by playing video games. As he needed something read to him, she would oblige. Eventually, he learned to read on his own. Similarly, he learned math by calculating how many weeks' allowance would be required to save before he could buy a toy that he wanted. With unschooling, "how you learn something is because you want to learn it" (Davis, 2006, p. 8).

Catholic homeschooling. Although Roman Catholics have long held a strong presence in the world of homeschooling, in recent years there has been a tremendous increase in Catholic homeschooling (Gaither, 2009). According to Ray (2009a), Catholic homeschoolers today account for about 12% of all homeschoolers, an increase of almost 7% within the last 10 years (Protestants still constitute the majority of homeschoolers). In Catholic homeschooling, as opposed to other forms of homeschooling, "the entire curriculum is permeated with the teachings of Christ, that is, with Catholic doctrine and values" (Clark, 1993, p. 21). Many organizations subsequently have arisen that specifically embed Catholicism in the curricula. For example, in the use of Seton Home Study materials, arithmetic, art, handwriting, history, and music all incorporate elements of the Catholic faith and teaching (Seton Home Study School, 2010). This does not mean, however, that the curriculum must be stamped "Catholic." An authentic Catholic education, whether accomplished at home or at school, "relies on all that is true, good, and beautiful—in short, everything that points its way to God, the source of all truth, goodness, and beauty" (K. Hahn & Hasson, 1996, p. 163). According to K. Hahn and Hasson (1996), it more important that Catholic families who choose to homeschool their children create an authentic Catholic atmosphere as opposed to providing their children with math workbooks that require them to count crosses.

Sources of Curriculum or Books

Parents cite a variety of sources for obtaining curriculum or books. According to a survey conducted by the NCES (2003), the majority of homeschooling parents (78%) obtained books from the public library as their primary source for curriculum, followed closely by a homeschooling catalogue, publisher, or individual specialist (77%); a retail bookstore or some other store (69%); or an education publisher not affiliated with homeschooling (60%). Nearly half of the parents who responded to the survey cited that they obtained their curriculum or books from a homeschooling organization; 37% from a Church, synagogue, or other religious organization; and 26% from other sources. Moreover, a major resource for parents in regards to homeschooling curriculum is distance-learning media. According to the NCES (2003) survey, 41% of parents surveyed said that they used distance learning, including mail, taking a course via the Internet, e-mail, TV, video, or radio. Fifty-nine percent responded that they did not use distance learning in their homeschooling curriculum.

Parents' Legal Rights to Homeschool Their Children

Laws and regulations. When parents started taking their children out of public schools (in the 1960s and 1970s) in favor of homeschooling, homeschooling was, for the most part, an illegal activity. Compulsory education attendance laws in all 50 states forbade parents from keeping their children at home (Erickson, 2005). Yet, despite these laws, according to Cooper and Sureau (2007), many parents still remained convinced that removing their children from public schools would be in their best interest. Many parents, especially those on the religious right, felt like it was their duty to fight the new secular humanism or New Age philosophy being taught in schools. In addition, as previously mentioned, parents cited reasons of overall dissatisfaction with the religious and moral

instruction in public schools, fear of violence and potential exposure to alcohol and drugs, dissatisfaction with the overall education in public schools, and the inadequacies of public schools to meet the needs of their children (NCES, 2009).

Today, homeschooling is legal in all 50 states (Lips & Feinberg, 2008). The basis for this legality is the parents' right to educate their children, which takes precedence over state control. According to HSLDA data, as cited in Lips and Feinberg (2008), "10 states require no notice from homeschoolers, 15 states have 'low regulation' (requiring only parental notification), 20 states have 'moderate regulation,' and six states have high regulation" (p. 2). States with moderate to high regulation require parents to send notification, test scores, or professional evaluation of student progress (and other requirements). States considered to be highly regulated include Pennsylvania, New York, North Dakota, Vermont, Rhode Island, and Massachusetts (Lips & Feinberg, 2008). States considered moderately regulated include Florida, Georgia, North Carolina, South Carolina, Virginia, and Minnesota. Low-regulated states include many of the Midwest to Western states (Lips & Feinberg, 2008).

In Florida, parents can choose to homeschool their children under Option 1 of Florida's home education law (Fla. Stat. Ann. §1002.41, as cited in HSLDA, 2009a). Under this law, homeschooling parents must meet the following requirements: Parents must notify the local public schools' superintendent of their intentions to homeschool within 30 days of beginning; names, birth dates, and addresses of homeschooled students must be provided; and a portfolio of records and materials must be kept and preserved for 2 years consisting of any and all educational activities, such as the titles of books read, writing samples, worksheets completed, and any creative materials developed by the student. Under state law, the portfolio must be made available to the superintendent

within 15 days of written notice. However, the superintendent, or any other school official, has no authority to enter the home. Parents operating under the homeschooling law in Option 1 must submit a copy of an evaluation annually with the local school district superintendent. The evaluation can be conducted by any Florida state-certified teacher of the parents' choice, can be in the form of any state or national achievement test administered by a certified teacher, can be conducted by a licensed psychologist, or can "be evaluated with any other valid measurement tool as mutually agreed upon" (HSLDA, 2009a, p. 2).

Parents may also choose under Option 2 to operate as a private school. To operate as a private school, groups of homeschools must file as a private school under one of the following Florida statutes (as cited in HSLDA, 2009a): (a) Fla. Stat. Ann. Chapter 623, or the Private School Corporation Law; (b) the Nonprofit Corporation Law; or (c) the Florida Business Corporation Act.

Finally, parents can choose to operate under the private tutor law, Option 3, which is Fla. Stat. Ann. §1002.43 (as cited in HSLDA, 2009a). Under Option 3, a personal tutor must hold a valid Florida teaching credential (not a requirement for parents) and keep and submit all records required by the district and state. Additionally, students must be in attendance for a full 180 days, not a requirement under Option 1 (HSLDA, 2009a).

States with low regulation of homeschooling require only that parents notify the state of their homeschooling activities. Kansas, Nebraska, Wyoming, California, and Utah are examples of states that have such low regulation. States that have no homeschooling regulation do not require parents to make any contact with the state regarding their homeschooling activity. Such states include Texas, Michigan, Illinois, Oklahoma, and Idaho (Lips & Feinberg, 2008).

In Michigan, for example, homeschoolers have two options. According to the legal analysis presented by HSLDA (2009b), homeschoolers can operate under the homeschool statute or operate as a nonpublic school. Under the homeschool statute, "there are no requirements to notify, seek approval, test, file forms, or have certain teacher qualifications. The burden of proof is on the state to prove that the parents are not teaching their children" (HSLDA, 2009b, p. 1). Under the nonpublic school statute, home schools operating as a nonpublic school do not need approval by the Department of Education prior to or during operation, and teachers are not required to be certified. However, such home schools need to provide the local superintendent with the following information: the name, age, and address of any child enrolled in the home school; the name and address of the parent; and the name of the school district and city or town in which the parent lives.

Whether or not the state should regulate homeschooling and to what degree have been the source of much debate (Ray & Eagleson, 2008). Reich (2008), an advocate for increased state regulation of homeschooling, has not advanced the idea held by Glanzer (2008) and many other homeschooling advocates (such as HSLDA) that parents should have complete authority over the education of their children (which would include homeschooling). For Reich, the burden of proof should be placed solely on the parents "in ensuring that the interests of children in homeschools are being met" (p. 18). For Glanzer, the state should intervene only when it can prove that neglect or abuse is happening to the child. Glanzer argued, "Educational policy regarding homeschooling ought to follow the same legal framework as a child welfare policy; the burden of proof is on the state that the parents have harmed their child" (p. 18).

The debate over how much the state should regulate homeschooling continues,

with state legislators and policy makers vying for more or less regulation on homeschooling for various reasons. In a study conducted Ray and Eagleson (2008), a sample population of college-bound students' SAT scores were collected from low-, moderate-, and high-regulated states. After careful analysis, results indicated no significant difference between students in low-, moderate-, and high-regulated homeschooling states and academic aptitude (as measured by SAT scores). In fact, students in states with the highest regulation had the lowest average SAT scores.

Legal cases. Although public education has had years to show its weaknesses, breaking free from 130 years of compulsory education has not been an easy task for parents. Arguments for and against the good of a publicly educated citizenry and parental rights to choose for their children's education remain high, with homeschooling being only one of many choices (Dahlquist, York-Barr, & Hendel, 2006). Few legal decisions have had a greater impact in granting right to parents with regards to schooling choice (homeschooling) than the landmark *Pierce v. the Society of Sisters* (1925) and *Wisconsin v. Yoder* (1972) decisions (Cooper & Sureau, 2007; McConnell & Hurst, 2006). These cases played a pivotal role in paving the way for subsequent legal cases that involved parental control over their children's education. Moreover, the Catholic Church has not remained silent with respect to acknowledging the fundamental right of parents to educational choice (National Catholic Educational Association, 2003). In the following paragraphs, the writer presents the cases of *Pierce v. the Society of Sisters*, *Wisconsin v. Yoder*, and the Catholic Church's position with regards to parental choice and education.

***Pierce v. the Society of Sisters* (1925).** In *Pierce v. the Society of Sisters* (1925), in 1922, Oregon's Compulsory Education Act required all children between the ages of 8 and 16 to attend public school, essentially making it a crime for children to attend

Catholic or other private schools (Mizia, 2000; Schnake, 2000). According to Mizia (2000), the Ku Klux Klan, supported by governor candidate Walter M. Pierce, saw in this law an "opportunity to spread their insidious social and political values, clothed in fierce anti-Catholic bigotry" (para. 3). Rising up against this law was the Archbishop of Portland, Alexander Christie, backed by the Knights of Columbus, who used the Sisters of the Holy Name of Jesus and Mary (the Society of Sisters), joined by Hill Military Academy, to initiate a lawsuit against the State of Oregon and Governor Pierce for violating the parents' right to choose the best school for their child. As Schnake (2000) related, additional support came from across denominational lines to include Seventh-Day Adventists, Presbyterians, Episcopalians, Lutherans, and so on. Trial tactics included reference to *Meyer v. Nebraska* (1923), which concluded that the State of Nebraska denied teacher Robert Meyer of Zion Lutheran School his due process rights by denying him the right to teach a foreign language. In *Pierce v. the Society of Sisters*, the unanimous court ruled, while referencing the teaching of *Meyer v. Nebraska*, that the Act of 1922 unjustly interfered with the parents' rights to educate their children as they so desire. Under the banner of liberty, which protects the fundamental freedom of all people in the United States, the state had no authority to standardize the education of children by compelling them to receive instruction from public teachers only.

***Wisconsin v. Yoder* (1972).** Despite the importance of *Pierce v. the Society of Sisters* (1925) in establishing that parents have the right to choose how to educate their children, it was only a state decision; the U.S. Supreme Court did not rule on the state's role in education until *Wisconsin v. Yoder* (Prather, 2000). In *Wisconsin v. Yoder*, according to Prather (2000), members of an Old Order Amish community refused to send their children to public or private schools beyond the eighth grade and were thus

convicted of violating a compulsory school attendance law, which required school attendance until the age of 16.

The Amish claim was that school attendance (beyond Grade 8) undermined their basic religious tenets (Reich, 2002). The Amish had a tradition of continuing educational training at home because they firmly believed that "high school attendance was contrary to their way of life and would endanger their and their children's salvation" (Prather, 2000, p. 555). In a unanimous decision, the Supreme Court, led by Chief Justice Warren Burger, held that given the strong evidence of an almost 300-year tradition of the Amish community's sustained faith pervading their entire mode of life and existence, forcing their children to attend formal schooling after the eighth grade would gravely endanger, if not completely destroy, the free exercise of their religious beliefs. As McConnell and Hurst (2006) pointed out, the legal precedent and educational implications of the *Wisconsin v. Yoder* case have been far reaching. Besides opening the door for a proliferation of Amish schools, *Wisconsin v. Yoder* paved the way for "cultural self-determinism through control of education" (McConnell & Hurst, 2006, p. 236). These two cases, *Pierce v. the Society of Sisters* (1925) and *Wisconsin v. Yoder* (1972), clearly gave parents legal precedent with regards to their right to educational choice, which includes homeschooling.

Catholic Church and educational choice. In 1999, over 100 Catholic leaders came together for a symposium sponsored by the National Catholic Educational Association for the purpose of heightening awareness on the parental choice movement (McDonald, 1999). One of the keynote speakers, Robert Banks, bishop of Green Bay, Wisconsin, spoke of the Catholic Church's position regarding parents' right to educational choice. Banks affirmed that children are a gift from God given to parents and

not the mere creature of the state (McDonald, 1999). Moreover, according to Banks (as cited in McDonald, 1999), the Catholic Church has always held that the parents' right to choose an education for their child is a fundamental human right supported by Church teachings.

One such teaching that makes explicit this right is the Second Vatican Council's decree, *Declaration of Religion Liberty,* by Pope Paul VI (1965b). According to this decree, it is the fundamental right of every family to freely direct, without state hindrance, their own religious way of life under the authority of the parents. In accord with this right, each family ought to be free to choose the form of religious upbringing given to children. Moreover, local authorities must recognize the genuine rights of parents to choose the education provided to their children—whether it is education at home or some other private (nonpublic) school. In addition, if children are forced to attend a school (or class) that is not in agreement with the family's religious beliefs, or if there is only one type of compulsory educational system that excludes all religious instruction, the rights of parents are thus consequently violated. Subsequent Church documents, such as *Declaration on Christian Education* (Pope Paul VI, 1965a), *The Catholic School* (Sacred Congregation for Catholic Education, 1977), and *The Catholic School on the Threshold of the Third Millennium* (Congregation for Catholic Education, 1997) reiterated the rights of parents to choose an education for their children as well as the importance of an education to be holistic, including not only academic instruction but also faith formation.

Criticisms of Homeschooling

Despite the perceived benefits of homeschooling, it is definitely not without criticism. Lubienski (2000), a strong critic of homeschooling, has denounced it as an

extreme form of educational privatization that not only denies democratic accountability but also "disenfranchises the community from its legitimate interest in education" (p. 229). According to Belfield and Levin (2005), homeschooling places emphasis on the private interests of education over public interests. McMullen (2002) has expressed her own concerns regarding the lack of socialization skills of children who are homeschooled and has acknowledged concerns over poor curriculum content.

Insufficient socialization is a recurrent criticism of homeschooling. As noted by Brewer (2007), people are concerned that homeschooled children will grow up being too shy, withdrawn, and unable to relate to other children their own age. Additional criticisms by Brewer were targeted at homeschoolers for being religious fanatics trying to shelter and isolate their children from the world. Another major criticism by Brewer was that parents are not qualified to teach; parents are thought to lack the necessary teaching credentials and skills possessed by teachers who are qualified to teach in public and private schools. Finally, criticisms surround the inability of homeschooling to adequately prepare students for entering college. However, much evidence to the contrary exists and will be put forth in this applied research paper.

An additional criticism of homeschooling, according to Shaw (n.d.), is that homeschooling places serious time constraints on the parent or parents involved in homeschooling. For example, in order to homeschool well, the mother's day is usually consumed with teaching, choosing learning experiences, planning and driving to extracurricular activities, and so on. Furthermore, as Shaw related, homeschooling places financial constraints on families who homeschool their children. Instead of both parents working, homeschooling families typically have one parent stay home (and homeschool) while the other works. This requires a big sacrifice of homeschooling families who,

instead of having a two-parent income, have only one income. An additional criticism to homeschooling, noted by Shaw, is being with one's children 24 hours a day, 7 days a week. There is no doubt that being with children all day, every day, can be mentally and physically draining and put a strain on relationships. Discipline can become an issue between parent and children as well. Having a less structured environment also may make it difficult to keep children focused on learning.

Finally, those involved in homeschooling are often limited in terms of competitive sports teams. Although schools increasingly are open to homeschoolers playing on their teams, many homeschoolers are not welcome to participate in team sports with their traditionally schooled peers, due to school policy prohibitions (Shaw, n.d.).

Homeschoolers off to College

Rise of homeschoolers in college. The homeschooling movement, once considered illegal in all 50 states, is increasing in numbers at an unprecedented rate in K-12 education, resulting in thousands of homeschooled students going to college. Twenty years ago, colleges such as Iowa State University or the University of Texas at Austin received one or two applications from homeschoolers; universities now receive an increased number of applications (Shea, 1996). Each year Harvard University accepts 10 new applicants from homeschooled backgrounds (National Center for Home Education, 2000a). Moreover, other prominent national universities, such as Stanford, Yale, Princeton, Texas A&M, Brown University, Cornell University, and Carnegie Mellon Institute, are experiencing similar increases in the number of homeschoolers. Kennesaw State University, located in Atlanta, is an example of a school that has been the recipient of an increase in enrollment in the number of the home educated (Evans, 2001). In recent years, the number of homeschooled students applying to Kennesaw State University was

six to seven per year. It is not uncommon for Kennesaw State University to admit that number per semester (Evans, 2001). Whereas the university was once hesitant towards homeschooled students, it has now become quite "homeschooler friendly," due in large part to a greater understanding of the homeschooling population, which borders on "admiration" (Evans, 2001, p. 21).

College admission officers' perceptions of homeschoolers. With varying opinions of homeschoolers' ability to succeed in higher education, college admission officers' perceptions of homeschoolers can influence their chances of admission. In a study conducted by Sorey and Duggan (2008), 12 admission officers from community colleges located in a mid-Atlantic state were surveyed regarding their perceptions of homeschooled applicants. All respondents either strongly agreed (45%) or agreed (55%) that they expected homeschooled students to be as academically successful as traditionally schooled students in college. Moreover, admission officers were asked to respond to survey questions regarding their views on homeschooled students' academic and social preparedness for college. Sixty-four percent said that they strongly agreed or agreed that homeschooled applicants, 18 years or older, were academically prepared for college. Additionally, 55% strongly agreed or agreed that homeschooled applicants, 18 years or older, were socially prepared for college.

According to one admission officer, quoted in Sorey and Duggan (2008), "Homeschooled students are as prepared or even better prepared for college academics as compared to their high school graduate counterparts" (p. 26). Responses were different, however, for homeschooled students under the age of 18. Only 36% of admission officers agreed or strongly agreed that homeschooled students were academically prepared for college.

Similar to Sorey and Duggan (2008), Jones and Gloeckner (2004b) conducted a study for the purpose of determining the perceptions of college admission personnel towards homeschooled students applying to college. However, whereas Sorey and Duggan examined perceptions of admission officers from community colleges, Jones and Gloeckner (2004b) focused on admission personnel from 4-year institutions. Fifty-five admission officers from public, private, and church-related colleges and universities located in the western United States participated in the survey. Results indicated that approximately 56% of those surveyed expected homeschooled students to be at least as successful as traditionally schooled students, 22% expected them to be more successful, 2% expected homeschooled students to be less successful, and nearly 20% did not respond. Regarding 1st-year GPAs, nearly half of admission officers expected homeschooled students to have a similar GPA as compared to traditionally schooled students, and about one fourth of the admission officers surveyed expected homeschooled students to outperform traditionally schooled students in regards to academics. Interestingly, however, all the church-related college admission officers expected homeschooled students to do better academically, compared to only 50% of admission officers at both public and private institutions.

College admission policies on homeschooling. As the ranks of homeschooled students continue to rise in higher education, many college and universities are adapting their admission policies for homeschooled students to be more like those for traditionally schooled students. However, some colleges and universities are still reluctant to admit the home-educated student and require more data than required for the traditionally schooled student (P. Hahn & Cruickshank, 2006). According to Tarricone (1997), in Georgia, homeschooled students who apply to state colleges are required to supply General

Educational Development (GED) scores and take a battery of standardized SAT II tests that traditionally schooled students are not required to take. Georgia Tech, for example, requires homeschooled students to score a 1350 on the SAT even to be considered for admission, whereas Georgia public school students need only a score of 1100. On the other hand, in North Carolina, state legislature passed a bill requiring universities to treat homeschooled student no differently than traditionally schooled students. Brown University is an example of a university that does not require homeschooled students to supply any more information than traditionally schooled students. Brown University admission officers look for good writing skills; some kind of outside assessment, such as community college grades or standardized test scores; and parent evaluations (Sutton, 2002).

According to Klicka (2007), the HSLDA created seven recommendations in 1997 for colleges to adopt in their written admission policies for homeschoolers. The goal of these seven recommendations was to assist college admission offices in crafting policies for homeschooled students, "taking into account their own unique circumstances and talents" (Klicka, 2007, p. 12):

1. Homeschoolers ought not be required to submit a GED or accredited diploma.

2. College admissions should be flexible in regards to the documentation of high school credit hours (if transcripts are required).

3. Parents should be recognized as competent in their ability to evaluate their child's academic performance (in letters of recommendation).

4. SAT and ACT scores or portfolios should provide schools with solid and adequate data for admission in regards to the child's ability to perform at an acceptable academic level.

5. Requiring homeschoolers to take SAT II subject tests is unnecessary and discriminatory.

6. Requiring homeschooled students to provide a bibliography of literature read and a writing sample are two admission criteria that can accurately assess a student's thinking skills and life experience.

7. Interviewing the homeschooled students and reviewing their extracurricular activities can be helpful in determining overall student quality and leadership ability.

In 1998-1999, the National Center for Home Education (2000b) conducted a national survey of over 913 colleges and universities, with a response rate of 52.8%, for the purposes of establishing what colleges and universities require of homeschooled applicants, comparing those requirements with the above-mentioned HSLDA recommendations, and encouraging many colleges and universities to loosen their often stringent requirements. As a result, the National Center for Home Education (2000b) created a rating system based on the institution's homeschooling-policy friendliness. Tier 1 means that colleges and universities have admission policies similar to those recommended by the HSLDA. Sixty-eight percent (or 349) of colleges and universities that responded to the survey fell in this category. Tier 2 means that a GED is required in place of or in addition to the Tier 1 conditions. Out of those surveyed, 28.1% (or 144) of colleges and universities required a GED. Finally, Tier 3 requires standardized achievement tests (SAT II) for homeschooled, but not traditionally schooled, students and also requires higher SAT scores from homeschooled students. Only 3.5% (or 18) colleges and universities fell in this tier. However, out of all the colleges and universities surveyed, almost three fourths of state-funded schools were Tier 3.

Transitional experiences of homeschoolers into college. Once accepted into

college, it is not uncommon for homeschooled students to have a difficult time in their transition from home to the classroom. Nevertheless, several studies have indicated that the transitional experiences of homeschooled students into college are, for the most part, positive. In a qualitative study conducted by Kranzow (2004), 18 homeschooled students attending two, small Christian universities were interviewed with the goal of gaining a better understanding of their transitional experiences into college. Interviews with the homeschooled students revealed a couple of important and consistent themes. The first theme that emerged was that the homeschoolers, as a group, felt academically prepared for college, with the need of some adjusting in getting used to the increased level of homework. Some additional areas of concern mentioned by the students included weaknesses in subjects such as writing, math, and science; adjusting to different professors and teaching styles; working in groups; taking more tests; time-management skills; and note-taking skills. Aside from academic preparation and performance, the second theme that emerged was the comfort level and approachability that homeschooled students felt towards faculty members. Nearly all 18 homeschooled students viewed faculty members as friends and individuals who were part of the college community with them. Some homeschooled students associated their close relationship with professors as a result of their close relationship with their parents; others felt that they had a close relationship with their professors because of their ability to get along well with adults. A final theme that emerged was the ease with which homeschooled students adjusted socially in their peer relationships (Kranzow, 2004).

Bolle, Wessel, and Mulhivill (2007) also conducted a qualitative study on the transitional experiences of 1st-year college students who were homeschooled. The subjects for this study were six homeschooled students who had matriculated to a

midsized, public, doctoral-granting university in the fall semester of their freshman year and were retained in the 2006 spring semester. Personal interviews were conducted with all six students using a semistructured interview guide. Many of the transitional issues experienced by the students were closely related to those experiences encountered by traditionally schooled students. Some of these issues included leaving home, independence, meeting others with different values and worldviews, developing identity, and making new friends. All of the students interviewed indicated some feelings of loneliness after arriving on campus, but the degree of loneliness was different for each student. A common experience that all the students felt was the development of a new identity away from their parents. Most of the homeschooled students had no problem making new friends, indicating that they made friends in different ways. The transitional issues that the students faced during their 1st year of college were also found to be closely linked to Tinto's (1975) theory of institutional departure, which includes the following elements: separation, transition, and incorporation. According to Bolle et al., the students felt initial anxiety from leaving home but were successfully able to assimilate into school.

Lattibeaudiere (2000) conducted a qualitative and quantitative study for the purpose of describing the experiences of homeschoolers as they transitioned from home school to college. The study's aim was to construct a portrait of these experiences from the perspectives of the students and from faculty and staff members at the selected higher education institutions. Participants for the study included 25 homeschooled students (19 female and six male) and 22 faculty and staff members. All student participants were White and attended public universities located in the state of Tennessee as well as religiously affiliated universities located outside of Tennessee (such as Washington,

Ohio, Alabama, Michigan, and Georgia). Data were collected via interviews, field notes, and two questionnaires, including the demographic and commercially available Student Adaptation to College Questionnaire. Driving the study were research questions based on homeschool experiences; the precollege decision-making process; expectations and knowledge of college life; and separation (from home) and transition into college, including academic and social adjustments. Results of the mixed-methods study indicated that 24 of the 25 students had a positive homeschool experience; performed well academically during their high school years; and scored high on national, standardized, college-entrance exams. Moreover, most students interviewed felt that their separation and transition into college was not a "traumatic experience" (Lattibeaudiere, 2000, p. 258). Overall, the results of the study indicated the homeschooled performed and adjusted well, academically and socially, to college life.

Catholic Education

Brief history of Catholic education. The history of Catholic education in America has its roots in the decision of American bishops of the 19th century to establish parochial schools in response to the perceived dangers to Catholic children by secular and Protestant influences in the public school system (Denig & Dosen, 2009; Marrin, 1997). These perceived dangers (i.e., Protestant proselytizing and anti-Catholic bias) led American bishops to decree in 1884 that all Catholic parishes erect schools near every church and that parents send their children to Catholic schools or educate them at home (Denig & Dosen, 2009; Hunt, 2005). According to Hunt (2005), it is important to note that not all bishops, priests, and laity supported the idea of the necessity of Catholic schools. The "School Question," as it became known, dominated Catholic affairs into the late 19th century (Hunt, 2005, p. 164). By 1900, however, there were an estimated 3,500

parochial schools in the United States. Twenty years later, an additional 4,500 parochial schools opened. By 1965-1966, Catholic schools reached their peak of over 13,000, with an enrollment of 5.6 million students, a figure that accounted for over 12% of all K-12 students in the United States (Hunt, 2005). Interestingly, over half the Catholic school-aged population did not attend Catholic schools, and about one third of Catholic parishes still remained without schools. As of 2010, there were approximately 7,000 Catholic K-12 schools with 2 million students (National Catholic Educational Association, 2010). This represents a decline in approximately half as many Catholic students served in half as many Catholic schools over the past 50 years (Notre Dame Task Force on Catholic Education, 2008).

The mission of Catholic education. Despite the decline in the number of Catholic schools, Pope Benedict XVI encouraged others that a Catholic education is more than just about statistics (i.e., the number of schools and students). On April 17, 2008, at the Catholic University of America in Washington, DC, Pope Benedict XVI met with educators from American colleges and universities as well as Catholic K-12 schools to address what he called the "crisis of truth," which is rooted in a "crisis of faith" (Richert, 2008, para. 1). Benedict XVI discussed the following purpose of a Catholic education. "First and foremost, every Catholic educational institution is a place to encounter the living God who in Jesus Christ reveals his transforming loving and truth" (Pope Benedict XVI, 2008, para. 2). Therefore, according to Pope Benedict XVI (2008), the purpose of an authentic Catholic education is to lead others in their pursuit of objective truth, which is "nothing less than an act of love" (para. 14). This pursuit of truth, the Pope emphasized, must be rooted in both faith and the Church. "Only through faith can we freely give our assent to God's testimony and acknowledge him as the transcendent

guarantor of the truth he reveals" (Pope Benedict XVI, 2008, para. 9). Moreover, Pope Benedict XVI stated, it is "faith which is given to us in the Church" (para. 9). Clearly, then, Catholic institutions of learning must reverberate "within the ecclesial life of faith" (Pope Benedict XVI, 2008, para. 10). It is in this way that Catholic institutions make a contribution to the primary mission of the Church, which is evangelization. This mission of Catholic education applies not only to primary and secondary Catholic schools but also to Catholic higher education institutions.

Catholic higher education. Taking the Pope's words to heart, today Catholic colleges and universities stand at an important crossroad (Cesareo, 2007). In recent years, Catholic colleges have experienced tremendous growth—with enrollment consisting of 60% to 95% Roman Catholic students; nevertheless, only 13% of college students who are Catholic attend Catholic colleges ("Catholic Colleges," 2008). Two reasons for this are (a) Catholic education is viewed as unaffordable, and (b) larger universities are viewed as better. According to Cesareo (2007), however, the biggest challenge facing many Catholic colleges hinges upon their faithfulness to their religious identity and the free exchange of ideas that is characteristic of higher education institutions.

In 1967, in Land O' Lakes, Wisconsin, an official effort was made by Catholic educators to distance themselves from Church authority. In their document, *The Nature of the Contemporary Catholic University*, Catholic educators asserted that in order for a Catholic university to perform its functions effectively, it must have full autonomy from any Church authority whatsoever (Garrett, 2006). In response to the Land O' Lakes statement, in 1990, Pope John Paul II issued the document *Ex Corde Ecclesiae* ("from the heart of the Church") reminding those who teach theology in Catholic higher education that it is their duty and responsibility to "remain faithful to the Magisterium of the

Church as the authentic interpreter of Sacred Scripture and Sacred Tradition" (Russo & Gregory, 2007, p. 151). Ten years later, in 2000, *Ex Corde* went into effect as American bishops received approval from Rome to formerly apply the document. Moreover, a formal study to review the impact of *Ex Corde* will occur in 2011 (Garrett, 2006). In the meantime, the application of *Ex Corde* has been anything but smooth in the United States; with a few exceptions, most Catholic college administrators and faculty members are defiant towards *Ex Corde* and view it is a "dead letter" (Russo & Gregory, 2007, p. 157).

The Catholic university has always stood apart from other colleges and universities in its unabashed acknowledgement of and service to the truth. According to Danneels (2001), the Catholic university presents itself to the world as a place where truth can be sought through faith and reason. One does not have to deny faith or reason in the search for truth; rather, it is only through the power of reason in harmony with faith that truth is made known. Moreover, the Catholic university has always maintained the oneness of truth: "There can be no dichotomy between faith and reason, between the heart and the intellect, between belief and knowledge" (Danneels, 2001, p. 14). It is, therefore, the charge of the Catholic university in its service to the one truth that makes a Catholic university distinctively Catholic. This should not be considered unimportant or an accidental property. In other words, a Catholic university is not a university in spite of its service to the truth, but precisely because of it. In addition to the service of truth, the "depth-value" of a Catholic college or university lies in the opportunity it presents for one's encounter with "faith and the Gospel and the immeasurable, extensive, and expanding terrains of human understanding" (Danneels, 2001, p. 4).

Most Catholic colleges and universities claim adherence to a distinctive academic

curriculum, which includes a liberal arts core; the study of philosophy and theology; interdisciplinary study; and an emphasis on pastoral ministry, such as service to the poor (Janosik, 2000). According to Janosik (2000), the Catholic university is designed to be an institution that reaches out in evangelization to both society and the church. However, cloaking itself in a Catholic environment, or claiming to be an institution supported by the Catholic tradition, is not enough to make a Catholic university "Catholic." Rather, it is a Catholic university's relatedness to the Church and its rich faith tradition that makes it Catholic in the proper sense of the term. As Janosik related, the efforts of *Ex Corde Ecclesiae* (as mentioned above) were to "specify church-relatedness for all of Catholic higher education" (p. 47). Catholic colleges and universities are all called to be strong proponents and advocates for the Church and the Catholic faith, as opposed to many Catholic colleges and universities that are less committed to the Church (Janosik, 2000). The goal of Catholic colleges and universities must be to make God known and loved (Notre Dame Task Force of Catholic Education, 2008).

Despite the obvious benefits of attending a university that confirms the individual's faith, what is the value of attending a Catholic college or university? According to Lamadrid (2009), the true value lies within the integration of the whole person. Non-Catholic colleges and universities compartmentalize the person: For the mind, there is the classroom; for the body, intercollegiate athletics; and for the soul, a campus minister. On the other hand, Catholic colleges do not separate the person into these compartments. Academic studies, such as science, economics, or the humanities, are informed by theology and one's Catholic faith. As cited in Lamadrid, *Ex Corde Ecclesiae* reminded the individual that "the Catholic university or college assists each of its members to achieve wholeness as human persons" (p. 68). Additionally, the

Eucharistic Presence, the opportunities of reconciliation, and daily Mass make a Catholic college or university a source of togetherness for all who are a part (Lamadrid, 2009).

Academic Achievement of Homeschoolers in College

Studies on the effects of secondary schooling type and the academic aptitude and achievement of students in college. Several studies have helped set the framework for the academic achievement of homeschooled students in college. It is important to note that none of the following studies reviewed used a true experimental design (most used a correlational design in which variables were compared); in fact, no controlled experiment comparing the academic performance of homeschooled students to their traditionally schooled counterparts has ever been done (Lips & Feinberg, 2009). A controlled experiment is "one in which treatment is administered to participants for the purposes of the study and effects are measured. In a noncontrolled experiment, participants' traits are measured without attempting to change them" (Galvan, 2006, pp. 44-45). Without a controlled experiment, it is impossible to draw definitive conclusions regarding the cause-and-effect relationship between homeschooling and students' academic performance.

According to Ray (1999), the lack of true experimental data makes it very difficult (if not impossible) to ascertain the effect of schooling type on learner outcomes. In other words, to date, no one has randomly assigned children to different types of educational settings (e.g., private, public, and homeschooling), let them learn in these settings for 5-10 years, and then measured and compared their academic achievement and socialization, all in order to determine which educational setting caused the greatest difference in the measured factors. Besides, such an experiment would be, at the very least, ethically questionable. The reality is that researchers have to work with intact

groups and research settings that often contain uncontrollable and complex variables. For Ray (1999), this problem is not just a homeschooling research challenge but also the challenge for all social science research (especially involving children).

Although more weight is typically given to controlled experiments, some evaluative studies have been done showing a strong correlation between homeschooled students and their high academic achievement in college. A thorough and critical examination of the limitations of these studies is offered after a brief description of the methodology and results.

In 2009, Cogan (2010), director of institutional research and analysis at the University of St. Thomas, conducted a quantitative study for the purpose of examining the academic outcomes of homeschooled students at a midsized, unnamed, private institution in the upper Midwest. The study added to the paucity of research on the academic achievement of homeschooled students in college (O'Shaughnessy, 2010). Homeschooled students selected for Cogan's study represented approximately 1% of the total school population. Data collected were from a census file housed in the institution's comprehensive data warehouse. The dependent variables of the study, academic outcomes, included 1st-year GPA, 4th-year GPA, fall-to-fall retention, and 4-year graduation rates. Independent variables included whether or not students received a Pell Grant during their 1st year of admission, student race, gender, religious affiliation, and secondary school type (homeschool, Catholic, private non-Catholic, and public). Results indicated that homeschooled students were more likely than traditionally schooled students to be male and Catholic and were 2.5 times more likely to receive a Pell Grant. Homeschooled students on average achieved a higher ACT composite score (26.5), earned more college credit as incoming freshmen, had a higher 1-year cumulative GPA

(3.41), had a higher 4-year cumulative GPA (3.46), performed at the same level with regards to fall-to-fall retention rate, and had a higher 4-year graduation rate (66.7%) and overall retention rate (88.6%) when compared to traditionally schooled students (O'Shaughnessy, 2010).

Despite college admission officers' positive perceptions of homeschooled students, little is known about the students' ability to perform academically in college. Jones and Gloeckner (2004a) conducted a quantitative study to determine if any significant differences existed, within the area of academic achievement, between homeschooled and traditionally schooled students attending their 1st year of college. To accomplish this purpose, a random sample of 55 homeschooled and 53 traditionally schooled students was taken from 4-year public colleges and universities in Colorado. Variables such as GPAs, retention rates, ACT scores, and credits earned were used to assess academic achievement. Additional variables examined included gender, race or ethnicity, and institutional type (college vs. university enrolled). Data were collected by means of the Colorado Commission on Higher Education, which identified the high school graduates as being either homeschooled or traditionally schooled. The results indicated that homeschooled students scored higher in average GPA (2.78 compared to 2.59), credits earned, and ACT scores, when compared to their traditionally schooled counterparts (Jones & Gloeckner, 2004a). Differences were not found to be statistically significant. However, ACT composite scores as well as the math and science subtests approached statistical significance. The higher ACT science scores for homeschoolers proved to be interesting because, anecdotally, many homeschooled students are often labeled as not doing as well in the sciences when compared to traditionally schooled students. Analyses indicated that homeschooled students were as academically prepared

for college when compared to traditionally schooled students. In other words, parents should not be concerned regarding their efforts to adequately prepare their children academically for college.

Although the literature on homeschooling is growing, questions continue to persist in regards to whether the same children would do better academically at home or in the classroom. Barwegen, Falciani, Putnam, Reamer, and Stair (2004) conducted a quantitative study with the primary purpose of determining if perceived parental involvement was decisive in the academic achievement of traditionally schooled students, as measured by the ACT exam, when compared to homeschooled students. The study was conducted via surveys, using a Likert scale, designed to capture perceived parental involvement and demographic information, including students' gender, ethnicity, GPA, and ACT score. Questions concerned perceived parental expectations, involvement in their child's school, relationships with teachers and school, and overall perceived parental involvement. The participants for the study were high school seniors and parents located in an ethnically diverse, suburban high school community. Out of the 604 seniors who received surveys in their American government class, 21% responded with signed surveys. In addition to the student surveys, parents were sent similar surveys; out of the 127 parents who received surveys, only 18.9% responded. Results indicated that no significant difference was found on ACT scores between traditionally schooled students reporting high levels of parental involvement and homeschooled students. However, a significant difference was found on ACT scores between students who had high perception levels of parental involvement compared to those who had lower perception levels. The results of Barwegen et al.'s study supported findings that homeschooled students perform as well on college aptitude exams as traditionally schooled students

whose parents are also involved in their education.

Most studies conducted on homeschooling have collected either quantitative or qualitative data and have focused on academic achievement or socialization. Holder (2001) conducted a quantitative and qualitative study with the purpose of examining the college success of homeschooled students from two different perspectives: academic achievement and socialization. Seventeen college students who had been homeschooled and 17 traditionally schooled students attending a private Christian college were interviewed to obtain qualitative data regarding their feelings on their academic and social adjustments to college. Questionnaires were used to provide quantitative data on the students' academic achievement. Both groups consisted of 65% (11) females and 35% (6) males. All of the students interviewed in Holder's study were nonminority students. ACT scores and cumulative GPA were used as indicators of the students' academic achievement. Data results showed that the mean ACT score of homeschooled students was 25.6, whereas the mean ACT score of traditionally schooled students was 24.7. Moreover, the mean cumulative GPA for homeschooled students was 3.43, compared to 3.07 for traditionally schooled students. Statistical analysis revealed no significant difference in ACT score between homeschooled and traditionally schooled students but a significant difference in GPA between both groups. Interviews revealed that the majority of homeschooled students felt they were well prepared for college academically (Holder, 2001).

As the number of homeschoolers continues to rise in K-12 education and many homeschooled students go to college (Ray, 2004b), it seems appropriate to ask whether homeschooling is beneficial or detrimental for academic proficiency in higher education. Wichers (2001) conducted a study to determine the ability of homeschool students to

compete academically in higher education. She hypothesized that homeschooled students would perform as well as, if not better than, students having attended a traditional school. The methodology used in the study consisted of searching literature to find reasons that proved or disproved this hypothesis. Wichers used content analysis and studied documents related to the research from the Southeastern Oklahoma State University Library. Results of the study revealed that the Ohio Department of Education, which collected its own data through interviews, surveys, and the like, supported Wichers's hypothesis. The Ohio Department of Education (as cited in Wichers, 2001) reported in 1995 that homeschooled students were not at a disadvantage when seeking college admission. As a matter of fact, Wichers reported that over "150 colleges and universities in the United States were actively recruiting homeschooled students due to their reading comprehension, their know how to access information, and their commitment to learning" (p. 148).

Moreover, a study reviewed by the National Home Education Research Institute (as cited in Wichers, 2001) revealed that 33% of homeschooled students attended a 4-year college immediately upon completion of their schooling, and 17% attended a 2-year college. ACT scores also revealed that homeschooled students had the resources to be academically successful in college. Additional studies analyzed by Wichers (2001) included those conducted by Galloway and Rudner. Rudner's (1999) study found that homeschooled students did as well as traditionally-schooled students on ACT college entrance exams. Moreover, Galloway's (1995) study showed that homeschooled students did well in academic achievement tests.

The K-12 educational setting plays a significant role in determining the student's later success in college (Sutton, McKinney, & Hallahan, 1992). Sutton and Galloway

(2000) examined the college success of students from three different high school backgrounds: (a) public schools, (b) private schools, and (c) the home educated. Initial participants for this study included a sample of 180 students attending a private, liberal arts university in the Southeast. All students were required to be freshmen having completed their entire high school career in one of the three high school settings mentioned. However, only students who graduated by May 1997 comprised the final sample, which included 17 public-school graduates, 26 private-school graduates, and 21 homeschool graduates. Indicators of college success consisted of 40 variables centered on five domains: (a) academic achievement, (b) leadership, (c) professional aptitude, (d) social behavior, and (e) physical activity. Sources of information included transcripts, academic and general files, discipline records, and records of extracurricular activities. Results indicated that, generally speaking, no statistically significant differences were found among the three groups of students (33 out of the 40 variables tested revealed no significant difference). According to Sutton and Galloway, this finding led to the conclusion that, regardless of high school setting, all college-bound students receive essentially the same education. Furthermore, the results of the study suggested that all educational settings (home schools, private schools, and public schools) are preparing students for college success.

As mentioned above, although homeschooling continues to be a major force in the field of K-12 education, the academic achievement of homeschooled students in college has not been extensively studied. Gray (1998) conducted a quantitative study comparing the academic achievement of homeschooled students and traditionally schooled students at the postsecondary educational level. In addition, the views of homeschooled students regarding the development of socialization skills were compared to their parents' views.

Academic success was measured by the following variables: performance on standardized national tests (the SAT), English grades, and overall GPA. Survey questionnaires were utilized to collect and measure data. The subjects for Gray's study consisted of 56 homeschooled students, 38 homeschooling parents, and 44 traditionally schooled students, randomly selected from three 4-year colleges and universities in Georgia. Results indicated no significant differences between homeschooled and traditionally schooled students on SAT scores, English grades, and overall GPA. For the SAT, the verbal mean for homeschooled students was 541 compared to 529 for traditionally schooled students. The math mean for homeschooled students was 547 compared to 537 for traditionally schooled students (Gray, 1998). Regarding English grades, the most frequent grade for both homeschooled and traditionally schooled students was a B. Similar GPAs were found between student groups. Gray's study, once again, clearly indicated that homeschooled students are on par academically with traditionally schooled students.

With the increase in the number of children being homeschooled through their preadolescent and teen years, some students are seeking admittance to community colleges for the purpose of enhancing their high school or homeschool curriculum (Lavoie, 2006). Jenkins (1998) conducted a study that focused on the academic achievement of homeschooled students at community colleges located in Texas. This state was chosen because reports indicated Texas had one of the largest homeschool populations in the country; yet, no official information on numbers could be found for the state (Jenkins, 1998). For Jenkins's study, full- and part-time homeschooled students were compared to first-time, full- and part-time, community-college freshmen. Jenkins used 101 transcripts to measure the academic performance of these students. GPA and

Texas Academic Skills Program tests were analyzed to determine if any significant differences existed between homeschooled and traditionally schooled students. Jenkins's results indicated significant differences (a) between full-time homeschooled students (3.06 GPA) and first-time, full-time, traditionally schooled students (2.56 GPA) and (b) between part-time, homeschooled students (3.28 GPA) and first-time, part-time, traditionally schooled students (2.40 GPA). No explanation was given as to the difference in GPA between part- and full-time students.

With regard to the Texas Academic Skills Program test scores, homeschooled students performed significantly better than traditionally schooled students on the reading and math sections of the test; however, no significant difference was found between homeschooled and traditionally schooled students on the writing portion of the test (Jenkins, 1998). These results suggest that homeschooled students are academically prepared for community college.

It has often been said that the failure or success of the homeschooling movement lies in the failure or success of the adults who have been homeschooled. "What happens to these children who complete their education in a home school setting?" (Galloway, 1995, p. 4). Galloway (1995) conducted a quantitative study on the potential for academic success of homeschooled versus traditionally schooled students in college. Galloway chose aptitude for college-level English, measured by the ACT English subtest score and ACT composite test score, and achievement in a college-level (nonremedial) freshman English course, measured by scores on tests, quizzes, and a library research paper, as measures for future academic success in college. The subjects for Galloway's study consisted of 180 college freshmen from a liberal arts Christian university in the Southeast. The students were divided into the following three groups: (a) homeschooled

graduates, (b) public-school graduates, and (c) conventional private-school graduates. Data were gathered from academic records over the course of 2 years as well as from freshman English courses. After analysis, results indicated no significant differences among the students in their freshman English course. When comparing the library research paper and test scores reflecting vocabulary and grammar scores, homeschooled students exhibited similar academic achievement to traditionally schooled students. The only significant difference found was on the ACT English subtest score, with homeschooled students scoring significantly higher than traditionally schooled students. Galloway concluded that homeschooled students demonstrate similar academic preparedness and success in college when compared to their traditionally schooled counterparts.

Limitations of studies. The above-mentioned studies possess a number of limitations, which cannot be overlooked. As already noted, no study on homeschooling—as it relates to student academic achievement in college—has been based on a true scientific experiment; all studies have used correlational methods. This fact poses a serious limitation to an understanding of the cause-and-effect relationship between secondary school type and student academic performance in higher education. As previously alluded to, no cause-and-effect relationship can be established without a controlled experiment; only positive or negative correlations can be drawn. In the subsequent paragraphs, the writer reviews each of the studies examined above and proffers some of the more serious limitations.

In Cogan's (2010) study, the major limitations included a small homeschooling population of approximately 100 students attending only a single institution. Such limitations pose problems with regards to generalizing to the much broader population of

homeschooled students. Jones and Gloeckner's (2004a) study on the academic performance of homeschooled versus traditionally schooled students attending college was limited by their examination of 1st-year college performance only. One might argue that in order to attain a complete picture of student academic achievement in college, it is necessary to examine attendance and performance from start to finish.

Two major limitations can be found in the study of Barwegen et al. (2004). The first limitation was the use of student perception with regard to parental involvement and academic achievement, instead of actual parental involvement as observed by the researchers. A second limitation was the small sample size; the respondents comprised just 21% of the senior graduating class. In Holder's (2001) study on the academic achievement and socialization of homeschooled students attending college, the major limitation was the selected institution—a private, Christian university. Such a university might or might not be representative of homeschooled students attending non-Christian colleges or universities or of non-Christian, homeschooled students in general.

The major limitation of Wichers's (2001) study was with the methodology. Instead of conducting her own study on the academic achievement of homeschooled students, Wichers performed a content analysis examining reasons in the literature that would prove (or disprove) homeschooling success in college. Wichers assumed that the previously examined studies were without their own limitations (an assumption that cannot be made when seeking to authenticate the validity and reliability of any research study). In the study performed by Sutton and Galloway (2000) on homeschooled college success, one of the major limitations included the inability to control for the variable of curriculum. If one is interested in the method of secondary schooling type as a determinant of academic achievement in college, then curriculum should be controlled.

In the study conducted by Gray (1998), limitations included homeschooled students attending public college and universities in the state of Georgia only. Moreover, the Board of Regents did not (at the time) classify homeschooled students separately from other nonhomeschooled students having taken the GED, so statistics did not distinguish between these students. In Jenkins's (1998) study, as in Gray's, the major limitation included the collection of performance data on homeschooled students from a small sampling of community colleges located in the state of Texas only. When data are collected from such a small sample of colleges in one particular state, it becomes very difficult, if not impossible, to make broad generalizations regarding the academic achievement of homeschooled students attending college in general. Whenever possible, it is preferred to take a cross-sectional sample of colleges from multiple states.

Finally, in the study conducted by Galloway (1995) on the academic achievement of homeschooled students in college, the major limitation included the use of English test scores on the ACT exam and composition skills in a required English course to gauge student academic success in college. Other measures would be necessary to get a complete picture of a homeschooled student's academic achievement while attending college. Even though the above-mentioned studies possessed various limitations, this does not mean that important information cannot be gleaned about homeschooling from them. In fact, all the studies presented in this literature review provided pieces to the puzzle in regards to secondary school type (homeschooling) and its effect on academic achievement in college.

SAT and ACT as predictor of college success. For the purpose of this study, student SAT and ACT scores as well as GPA were used to measure and be the primary indicators of college aptitude and academic achievement of homeschooled students

attending the writer's university. Traditionally, academic achievement tests, such as the SAT or ACT, have long been used as predictor variables for college success (Kim, Newton, Downey, & Benton, 2010). Kim et al. (2010) noted a long-standing correlation of .50 between college aptitude tests (SAT and ACT) and college academic achievement. This strong correlation is evidenced by the fact that many colleges and universities use such test scores in the screening process for admissions. In a study conducted by DeBerard, Spielmans, and Julka (2004), overall high school GPA and SAT or ACT scores (among others) were used as predictor variables for the academic achievement and retention of college freshmen. Participants for the study included 204 undergraduate students from a private, West Coast university (147 females and 57 males with a mean age of 18.9 years). Students' high school GPA and SAT or ACT scores were obtained from the college registrar as well as re-enrollment status in the university the subsequent semester. DeBerard et al.'s results indicated, as expected, a positive correlation between high school GPA, SAT and ACT scores, and students' 1st-year GPA.

The new SAT. In 2005, the College Board made substantial changes to the SAT, which affected not only the structure of the SAT but also its scoring. According to Cornwell, Mustard, and Parys (2008), in addition to adding a third writing section, the SAT verbal section replaced analogies with critical reading passages. Moreover, the SAT mathematics section replaced its quantitative-comparison section with free-response questions that include Algebra II content. Concerns over the new writing section and test validity in predicting college academic success have arisen amongst scholars. In a nationwide, correlational study involving 110 colleges and universities conducted by Kobrin, Patterson, Shaw, Mattern, and Barbuti (2008) on the validity of the new SAT in predicting 1st-year GPA in college, results indicated that the SAT writing section had the

highest correlation with 1st-year GPA among the three individual SAT sections. As a matter of fact, the SAT writing section had a higher correlation with 1st-year GPA than the SAT verbal and mathematics sections combined. Nevertheless, the SAT verbal and math sections had similar positive correlations with GPA when compared to previous studies conducted by the College Board. When taken together, high school GPA and SAT scores proved the best predictors of college academic success (as opposed to SAT scores or GPA alone).

Additional research has confirmed the correlation between SAT and student performance in college. In the study conducted by Cornwell et al. (2008) on nearly 5,000 first-year students attending the University of Georgia in 2006, a correlation was used to show the relationship between SAT scores (including all three SAT sections) on students' 1st-year GPA. While controlling for variables (such as gender, race, etc.), results indicated that all three SAT sections favorably influenced GPA. The SAT writing scores showed that with each increase in 100 points, students earned 0.07 points higher on their GPA. Additionally, the SAT writing section was shown to be more significant in its correlation with 1st-year GPA than the SAT verbal and math sections. Moreover, the SAT writing section was shown to overshadow the SAT verbal section; the verbal section alone was shown to be a significant predictor of academic achievement, but when the SAT writing section was included in the regression analysis, the verbal section lost its significance. Regarding limitations, this study was conducted only at one institution (the University of Georgia) over a short period. Further studies analyzing the effects of SAT over a longer period of time are certainly needed. Nevertheless, although the scores are imperfect predictors, SAT scores (in addition to high school GPA, other standardized tests, curriculum intensity, Advanced Placement credit, etc.) clearly help predict the

academic achievement of 1st-year college students. Further studies would be helpful in validating the new SAT's predictive power (Cornwell et al., 2008).

GPA as a measure of academic achievement. It is without debate that finding an absolute measure of academic achievement in any educational setting is difficult, if not impossible. After all, despite all efforts to make grading objective, grading remains an overall subjective experience (to include grade inflation). Nevertheless, according to Horn (2006), colleges and universities "continue to use GPA as a measurement for [student] academic achievement" (p. 4). GPA provides a cumulative numeric value as a measure of a student's formative and summative assessment as he or she progresses through college. In conjunction with SAT scores, GPA and class rank provide colleges and universities with adequate information in predicting future college success. In fact, in speaking about college academic achievement it seems rather obvious why college GPA alone is not used as indicator of academic achievement. Many higher performing students typically select more advanced academic courses, such as advanced calculus and advanced science courses, whereas lower achieving students tend to select academic courses that are less rigorous, such as courses similar to high school (Hsu & Schombert, 2010). Therefore, even though two students may have the same GPA, it is not necessarily indicative of who is achieving at a higher level academically. In addition, not all courses are weighted equally; an A grade in one course may be worth more than an A in a different course, affecting GPA differently. Nevertheless, when taken together, SAT and GPA can serve as a powerful predictor and indicator of college academic achievement. It should be noted, however, that low SAT scores do not necessarily preclude a high GPA, or vice versa.

GPA, core curriculum, and majors. According to the website of the writer's

university, the university offers a core curriculum that requires all students to take specific courses in the great tradition of the liberal arts. The core curriculum comprises half of the students' education and creates a "leveled playing field" in regards to comparing GPA and thus measuring academic achievement. According to Andrew Dinan (personal communication, September 12, 2010), even transfer students need to take the required core courses. The core curriculum consists of three theology courses, three philosophy courses, two history courses, two literature courses, two Latin courses, two courses (by choice) in the natural sciences, an American civilization course, one course (by choice) in mathematics, and two courses in the fine arts. The course names are as follows: Sacred Scripture, Sacred Doctrine, Moral Theology, Nature and Person, Ethics, Metaphysics, Western Civilization I and II, Literary Tradition I and II, Elementary and Intermediate Latin, Biology (two different levels), Chemistry, Physics (two different levels), American Civilization, Number Magnitude and Form, Finite Mathematics, Functions, Calculus I and II, and Gregorian Chant. Moreover, course syllabi are predetermined and have remained relatively constant over the years. After completing the core requirements, students are given the option to choose from the following course majors: biology, business, classics, economics, history, literature, mathematics, music, philosophy, politics, psychology, and theology .

The Question of Socialization

The studies reviewed in this literature review indicated that homeschooled students seem to do well academically when compared to traditionally schooled students. However, according to Saunders (2006), homeschooled students' academic achievement "is not in question, but their socialization, by many, is" (p. 5). Saunders conducted a study by looking at the social integration and 1st-year persistence rates of homeschooled

students compared to traditionally schooled students attending college. The research subjects for the study included the entire 2004-2005 freshman class (596 students) attending Wheaton College, a Christian College located in Chicago, Illinois. Surveys were mailed to these students in May 2005, containing 36 closed-ended questions. The overall response rate to the surveys was 43.4% (Saunders, 2006).

Variables measured by the survey included social integration, persistence, and subsequent institutional commitment to the institution. Saunders (2006) posited, along with Tinto's (1975) interactionalist theory model, that students with higher levels of social integration would have higher levels of institutional commitment and therefore greater persistence towards college graduation. Although independent variables were considered (such as students' gender, minority status, parents' educational level, etc.), focal to Saunders's study were the students' type of schooling and the effect it had on the dependent variables of social integration and 1st-year persistence rates. Also included in this study were antecedents to social integration, including institutional commitment to the welfare of the student, communal potential, and institutional integrity.

Initial findings from Saunders's (2006) study revealed that type of schooling had no significant effects on social integration when the other variables were considered. However, further analysis revealed that homeschooled students had higher rates of communal potential (i.e., they felt more connected to the university, faculty, and students) and institutional integrity (i.e., they felt more strongly that the university's actions were consistent with its mission), which, in turn, directly anteceded and therefore affected the students' social integration. Finally, correlations were shown between homeschooled students and institutional commitment, which, in turn, was shown to have a positive effect on students' persistence. Saunders concluded that colleges and

universities with similar demographics to Wheaton College need not worry about homeschooled students' social integration. A limitation of the study was that Wheaton College was already considered a good fit for homeschooled students based on the high numbers of homeschooled students in its population.

Again and again, data support that homeschooled students do as well as, if not better than, traditionally schooled students in the areas of socialization in college. No research has contradicted this statement (Ray, 2004b). A report by Ray (2004b), exposing various research studies, confirmed this fact. Regarding socialization and homeschooled students, numerous studies employing "various psychological constructs and measures" confirmed that the home educated were "developing as well as, and often better than, those who attend institutional schools" (Ray, 2004b, p. 7). Regarding self-concept, studies showed that homeschooled students have a higher self-concept than traditionally schooled students. Interestingly, in a study conducted by Shyers (as cited in Ray, 2004b), students attending home schools were rated to have significantly fewer behavior problems when observed playing in mixed groups of students (both homeschooled and traditionally schooled students).

Another key question related to homeschooled students who go off to college is how these homeschooled students do in the real world. According to Ray (2004b), the "real world" is defined as "life after secondary school" (p. 7). In the largest nationwide study of homeschooled adults (7,306 adults, including college students; average age 21) conducted by Ray (2004b), the following results indicated just how well homeschooled adults do in the real world. More homeschooled adults (71%) revealed being involved in community-service projects compared to 37% of the general population. Moreover, more homeschooled adults (76% ages 18-24) voted in the previous 5 years compared to only

29% of the general population (the same age). More homeschooled adults read books (98%) and magazines (100%) than those in the general population (69% and 89%, respectively). The list went on. According to Ray (2004b), homeschooled adults clearly are highly involved in the community and civically engaged. Homeschooled adults are far from being "privatized and isolated" (Ray, 2004b, p. 9) when it comes to living in the real world.

Despite these findings showing homeschooled students to be socially integrated in college and well-adjusted to adult life, the socialization question, for many, continues to remain unanswered. In an effort to answer the question of socialization properly, Medlin (2000) conducted a comprehensive review of the research while recasting the socialization question into the following three questions:

1. Do homeschooled children participate in the daily routines of their communities?

2. Are homeschooled children acquiring the rules of behavior and systems of beliefs and attitudes they need?

3. Can homeschooled children function effectively as members of society?

With regards to the first question, Medlin (2000) revealed that homeschooled children are not as isolated as many people think. Homeschooled students, rather, were found to take part in more extracurricular activities than students attending a traditional school. Some of these activities include organized sports, 4-H clubs, church activities, Boy Scouts, volunteer work, music and dance lessons, and playing with friends. Nevertheless, the research collected by Medlin did indicate that homeschooled students tend to associate with people of varying ages (including adults and children) and less with their peers when compared to traditionally schooled students. Moreover, these

associations were found to be less meaningful. Whether or not the kind of social network that traditionally schooled students have with their peers provides for greater socialization than the kind of social network that homeschooled students have (with their peers) remains to be answered.

In response to the second question, Medlin (2000) illustrated that homeschooled students are, in fact, acquiring the rules of acceptable behavior as well as right attitudes. Medlin found homeschooled students to be "friendly," "helpful," and "trustworthy" (p. 114). On standardized socialization tests, such as the Vineland Adaptive Behavior Scales, homeschooled students were found to be well-adjusted and scored higher than traditionally schooled students on "communication, daily living skills, socialization, and social maturity" (Medlin, 2000, p. 114). In a study that tested 70 homeschooled and traditionally schooled students (controlling for variables such as race, gender, family size, and socioeconomic status), no significant difference was found between students in regards to self-concept and assertiveness (Medlin, 2000). More interestingly, when allowed to play and work together, traditionally schooled students were found to have more problem behaviors than homeschooled students. Homeschooled students were observed to introduce themselves, sought common interests in conversation, played well and cooperated together, but were quiet.

Finally, with regards to the final question, Medlin (2000) indicated that homeschooled students are just as successful in higher education and employment as traditionally schooled students. Moreover, homeschooled students were found to be just as socially prepared. In a study designed to examine students attending a small, private college, homeschooled students were compared to traditionally-schooled students on 63 indicators of college performance (Medlin, 2000). Homeschooled students came in first

for 42 out of the 63 indicators, including many leadership indicators. This clearly demonstrates that homeschooled students not only function effectively as member of society but also are leaders. Research to address the question of socialization suggests that homeschooled students are thriving in their environments.

Summary and Conclusion

Summary of major points. Much has been written on the rise of homeschooling as an educational and social phenomenon. The birth of modern homeschooling, which is really nothing more than a re-emergence of an old practice, can ultimately be seen as the result of pedagogue and ideologue dissatisfaction with the public school system (Aurini & Davies, 2005; Lines, 2000). Its practices are idiosyncratic; the myriad of ways in which parents practice homeschooling varies according to their educational philosophy, the resources available to them, and their child's interests (Cohen, 1997). Trying to pigeonhole homeschooling parents into one pedagogical approach or another is therefore often very difficult. Homeschooling methodologies employed by homeschooling parents include the traditionalist, eclectic, and unschooling approaches, to name a few. Parents who homeschool their children can also be said to have a legal and human right to do so (Monk, 2003). Underlying this right is the *Universal Declaration of Human Rights* (1948), which clearly states, "Parents shall have a prior right to choose the kind of education that shall be given to their children" (Article 26.3). Moreover, the Catholic Church has unwaveringly affirmed the rights of parents to home educate ("Parental Choice in Education," 2003). Yet, in spite of this legal right given to parents to homeschool, homeschooling continues to draw criticism.

As the number of homeschoolers rise in K-12 education, one thing is for certain: More of them are going off to college. College admission policies are becoming more

homeschooler friendly; college admission officers are also beginning to target homeschooled students in their recruitment efforts (Mason, 2004). Studies have confirmed (Jones & Gloeckner, 2004b; Sorey & Duggan, 2008) that college admission officers think highly of homeschooled students and do not see them as faring any differently in terms of academics when compared to their traditionally schooled counterparts. In Catholic higher education, a large percentage of students are Catholic ("Catholic Colleges," 2008), and homeschooling is now quite popular among many Catholics. Thus, it is not uncommon for a large percentage of Catholic university students to be formerly homeschooled. Despite this large percentage, there is a literature void on the academic achievement of homeschooled students attending a Catholic college or university. However, the studies that have been completed so far, often involving public or private non-Catholic colleges and universities, have indicated that homeschooled students perform just as well as, if not better than, traditionally schooled students with regards to academic achievement.

Deficiency of knowledge regarding academic achievement. Though many studies have been conducted on homeshooling and homeschooled students (Cogan, 2010; Galloway, 1995; Gray, 1998; Holder, 2001; Jenkins, 1998; Jones & Gloeckner, 2004a, 2004b; Ray, 2004a, 2004b; Ray & Eagleson, 2008; Rudner, 1999; Sutton & Galloway, 2000; Wichers, 2001), relatively little is seen in the literature regarding their academic achievement in college (Clemente, 2006; Saunders, 2006). As previously mentioned, no study has been done, to the writer's knowledge, on the academic achievement of homeschooled students attending a Catholic college or university. Furthermore, as no true experimental studies have been conducted regarding the effects of schooling type on student academic performance in college, more correlational studies need to be conducted

to prove, beyond a reasonable doubt, that homeschooling is an effective alternative to traditional forms of schooling (Ray, 2000). Yet, the studies conducted so far have shown a positive correlation between homeschooled students and academic achievement in college. Studies must control for variables (student race or ethnicity, gender, parental educational levels, parental income levels, etc.) in order to ensure a more closely fit correlation between schooling type and academic achievement in college.

Conclusion. In conclusion, home education, as an educational movement, can no longer be seen as a fringe movement of American society; rather, it has significantly grown to a mainstream practice throughout the United States in the last two decades (Ray, 2004a; Wasley, 2007). Not only is homeschooling becoming more popular in the United States, but it is also gaining increasing acceptance in countries like Africa, Australia, Canada, England, France, Ireland, Italy, Israel, New Zealand, and Switzerland (McIntyre-Bhatty, 2007). For example, in Scotland, according to McIntyre-Bhatty (2007), growth has been rapid, with a 39% increase in homeschoolers between 2005 and 2006. Even in countries like Germany or Sweden, where homeschooling is heavily restricted, or the Netherlands, where it is illegal, pockets of homeschooling groups have arisen. What is becoming increasingly clear is that homeschooling is now seen as a valid educational alternative to traditional schooling, and its impact on education and society can no longer be denied.

Research Questions

Based on the literature review, five research questions guided this study:

1. Is there a statistically significant difference in overall SAT or ACT scores by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

2. Is there a statistically significant difference in overall college GPA by

secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

3. Is there a statistically significant difference in GPA by major by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

4. Is there a statistically significant difference in core GPA by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

5. Compared to public-schooled and Catholic-schooled students, how much academic merit or value do homeschooled students bring to a Catholic university?

Chapter 3: Methodology

Participants

The sample population for this study consisted of both homeschooled and traditionally schooled students attending a private, liberal arts, Catholic university located in South Florida. This population included all students enrolled between Fall 2007 and Fall 2010 who met the criterion of attendance of a single secondary school type for all 4 academic years. According to preliminary data obtained from the college registrar's office, approximately 30% of the sample population come from a homeschooled high school background and 70% of students come from a traditionally schooled high school background (both public and Catholic). Moreover, approximately 47% of the students are male and 53% are female. Class-level sizes include 32% freshmen, 22% sophomores, 22% juniors, and 18% seniors. In regards to ethnicity, approximately 65% of the students are White, 15% Hispanic, 3% Black, 5% Asian, and 12% unknown. Moreover, in regards to religious affiliation, approximately 75% of the students are Catholic and 25% of the students come from different religious backgrounds.

The writer's sample population equaled the current population of 4-year homeschooled and traditionally schooled students. Therefore, this population was treated as a simple random sample that was used to make inferences in regards to the academic achievement of future students attending the same institution. There was no reason to believe that the academic achievement of the current population of students attending the university would be different from future students, so sampling error was negligible. This ensured a high level of confidence, guaranteeing that the results of the study were accurate and reliable predictors of academic achievement (Kennan, 2009).

Instrument and Variables

The data collection instrument for this evaluative study consisted of archival data collected from the college registrar's office located within the university's main campus. In compliance with the Family Educational Rights and Privacy Act (as cited in U.S. Department of Education, 2011), which protects the privacy rights of individual student records, the writer did not have access to any identifiable student information. The writer received a compiled list of coded student information. Demographic information included admittance year (Fall 2007 through Fall 2010), gender, high school type (public school, private non-Catholic school, Catholic school, and homeschool), race or ethnicity, and religion. Academic information included ACT composite scores, SAT total scores, cumulative GPA, major GPA, and core GPA (for Fall 2007 and 2008 students only). Moreover, only first-time-in-college students were included in this study. Students from private, non-Catholic schools were omitted due to small population size.

The main categorical variable, which served as the basis for this study, was students' secondary school type: homeschooled and traditionally schooled students. As indicated, the variable of secondary school type was strictly determined based on students who were homeschooled and traditionally schooled through all 4 years of high school. This is significant due to the many exceptions of students who might have attended a traditional school for the beginning of their high school career, for example, Grades 9 and 10, yet switched to homeschooling and graduated as a homeschooler, or vice versa (R. Dittus, personal communication, January 21, 2011). The use of such a blended type of secondary schooling could seriously influence the results of this study.

The focus of this study was an evaluation of the academic achievement of homeschooled students versus traditionally schooled students attending a Catholic

university. As such, the dependent, continuous variables examined included SAT and ACT scores, overall college GPA, major GPA, and core GPA. As previously mentioned, SAT and ACT scores and GPA have long been used as valid and reliable predictors of academic aptitude and achievement (Cornwell et al., 2008; DeBerard et al., 2004; Horn, 2006; Kim et al., 2010; Kobrin et al., 2008). Whereas SAT and ACT scores (in addition to high school GPA) are probably the single-most important predictor of student academic success (prior to college admittance), according to Pascarella and Terenzini (2005), grades are the most consistent indicators of academic achievement once students have entered college.

For the purpose of comparing SAT and ACT scores, the writer included students of all class levels: freshmen, sophomores, juniors, and seniors. The writer's university accepts either SAT or ACT scores, so students have documented either one achievement test score or the other (and in some instances both). Overall GPA includes the average of grades earned in all courses taken by students at the writer's university. For the purpose of comparing overall GPA, all class levels were included, in addition to a separate analysis of individual class levels by school type.

As in most colleges and universities, the writer's institution employs a core curriculum. The core curriculum for students attending the writer's university includes a total of 16 courses, or 64 credits. This accounts for half of the required 128 credits required for student undergraduate graduation with a Bachelor of Arts degree. All students are required to take the core curriculum, so analyzing core GPA (dependent variable) would provide an objective comparative when looking at secondary school type and academic achievement. Only students who had completed the core curriculum, juniors and seniors, were analyzed. In addition, as most students wait until completing the

core curriculum before taking courses that pertain to their major, when analyzing major GPA, only juniors and seniors were included. According to the writer's university's website, students can choose from the following majors: biology, business, classics, economics, history, literature, mathematics, music, philosophy, politics, psychology, and theology.

A couple of variables were unaccounted for in this applied research study. The first variable that was not addressed by the writer was the number of years students were homeschooled prior to attending secondary school. It is not uncommon for students to be homeschooled sporadically for 1-2 years, or perhaps consistently through eighth grade, and then attend a traditional high school (Isenberg, 2007). At the writer's institution, secondary schooling type is tracked, but no information is gathered regarding schooling type prior to high school. The percentage of students homeschooled through high school and attending the writer's university is approximately 30%. However, anecdotally, according to the dean of faculty, the portion of homeschooled students attending the university who were homeschooled at least at some point in their educational career is most likely closer to 50% (M. Dauphinais, personal communication, November 11, 2010).

The second variable that was not addressed by the writer was the students' secondary school curriculum. Within the realm of homeschooling alone, various pedagogies (methodologies) are pursued by parents: traditional textbook, classical education, Charlotte Mason, Montessori, unschooling, and so on (Homeschool Learning Network, 2007). Additionally, there are some traditional homeschoolers who pursue a formal curriculum, such as Seton Home Study School (2010), and others who are more eclectic in composing their own handmade curriculum. As previously noted, the ability to

customize their child's education is one of the main reasons parents choose homeschooling (Ray, 2002). In regards to traditional schooling, curricula are often just as varied and difficult to account for. Some students attend a college-preparatory high school with a more rigorous curriculum, whereas others attend a high school where more electives are permissible.

Procedures

Design. The research methodology that was used by the writer in this applied research study was an evaluation design. According to Davidson (2005), an evaluation is defined as "the systematic determination of the quality or value of something" (p. 1). The overarching framework for the design, carrying out, and reporting of results for this evaluation methodology was Scriven's (2003) Key Evaluation Checklist (KEC). The KEC was used for the evaluation of the academic achievement of homeschooled students, hereafter referred to as the evaluand, attending a Catholic university located in South Florida, hereafter referred to as the focus institution. Homeschooled students, as mentioned above, make up approximately one third of the student population attending the focus institution, and many have described these students as the most successful group of students; yet, no formal evaluation has been done on the academic achievement of this group. Based on personal communication with the college registrar, most of the homeschooled students are traditional age (between 18 and 24), Catholic, and White, and approximately 50% are males and 50% females.

This evaluation was not asked for explicitly by anyone at the focus institution. However, when the idea was proposed, the vice president for academic affairs noted that any research information on the evaluand would prove beneficial to the relatively young institution (J. Sites, personal communication, August 16, 2010). The purpose of this

evaluation was to determine the overall value, or quality, of the evaluand in regards to their academic achievement in college. The type of evaluation was summative; its main purpose was simply to report this information, as opposed to making any suggestions for the improvement of the evaluand themselves. Moreover, the type of evaluation question that was asked was geared towards seeking the relative quality of the evaluand as opposed to the absolute quality (Davidson, 2005). According to Davidson (2005), questions that seek to determine the relative value or quality of something are "always asked in comparison with one or more other evaluands" (p. 18). The "other" evaluand for this study was achievement of both public-schooled and Catholic-schooled students attending the same focus institution.

Furthermore, sound evaluations are grounded on establishing appropriate and clear criteria on which to base judgments in regards to the value of the evaluand (Stufflebeam, 2001). The main criteria that were used to judge the academic aptitude and achievement of homeschooled students compared to traditionally schooled students included the following: (a) overall SAT or ACT scores, (b) overall college GPA, (c) GPA by major, and (d) core GPA. These criteria were further linked to the first four research questions for this study, respectively. Each criterion was weighted equally and was used to answer the first four research questions. Based on the answers to these four research questions, the writer was able to answer Research Question 5, which was the evaluation question.

Using multiple sources of evaluative criteria in judging academic achievement provided for triangulation, which enabled the writer to draw more certain conclusions regarding how the evaluand was doing (Davidson, 2005). Qualitative data, however, were not used. Such data would have allowed for a more robust evaluation, yet time

restrictions limited the writer to collect quantitative data only.

According to Scriven (1991), an important part of any evaluation is identifying the intended effects, or results, based on pre-established criteria (such as those mentioned above). For the purpose of this study, however, a goal-free, as opposed to goal-based, evaluation was used. In goal-free evaluation, specific goals or stated achievements are intentionally avoided, so as to take into account all possible effects. Additionally, in goal-free evaluation, the goal-free evaluator is more concerned with what the evaluand is actually doing as opposed to what the evaluand ought to be doing. For example, for this study, the writer purposely avoided stating that homeschooled students should obtain a predefined score on their SAT or ACT, possess a certain college GPA, or obtain specific grades in core courses in order to be considered academically successful. Instead, the writer merely evaluated the academic achievement of homeschooled students compared to those students having attended a traditional school. Merit was strictly determined by analyzing the achievement of these two groups.

Fundamental to any good evaluation is knowing, in advance, the consumers (impactees) or stakeholders of the evaluation (Gangopadhyay, 2002). According to Gangopadhyay (2002), knowing who the consumers or stakeholders are up front is critical in clearly delineating the context in which evaluation results will be used. Moreover, consumers or stakeholders can be classified as both immediate and downstream recipients. For this study, the immediate recipients of the evaluation were the administrative personnel at the focus institution, for whom this evaluation was being conducted. Downstream recipients, which are always harder to identify, included, but were not limited to, faculty and staff at the focus institution, admissions professionals in other colleges and universities, homeschooled students, parents, and all those interested

in the homeschooling movement in general.

The overall design of this evaluative study was correlational. According to Creswell (2008), "A correlation is a statistical test to determine the tendency or pattern for two (or more) variables or two sets of data to vary consistently" (p. 356). In a correlational research design, a correlational statistic is used to measure the relationship between two or more variables. Such a design can be useful when trying to explain the extent to which these variables covary. For this applied research study, as mentioned above, the main independent variable included secondary school type (homeschooled vs. traditionally schooled students), and the dependent variable included academic achievement, as measured by overall SAT or ACT scores, overall college GPA, major GPA, and core GPA.

Since these variables were not controlled or manipulated (with the exception of controlling for 4 years of attendance of specific secondary school type), the correlational design was not considered a true experiment. Nevertheless, the need for more correlational designs is supported by the literature (Clemente, 2006). The writer explores the possibility of cause and effect in Chapter 5; however, no cause-and-effect relationship could be proven with absolute certainty.

Data analysis. For this correlational design, the writer used two intact, independent groups, homeschooled and traditionally schooled students, to determine any statistically significant difference between secondary school type and academic aptitude or achievement in college. The writer's hypothesis was that homeschooled students' mean academic performance would be significantly higher than that of traditionally schooled students in all categories of academic achievement—overall SAT or ACT scores, overall college GPA, GPA by major, and core GPA—resulting in a superior merit

or value of homeschooled students for the focus institution. Therefore, the four null hypotheses were the following, resulting in a final null hypothesis of no noticeable merit or value of homeschooled students for the focus institution:

1. Homeschooled students' mean academic performance will not be significantly higher than that of traditionally schooled students in SAT and ACT scores.

2. Homeschooled students' mean academic performance will not be significantly higher than that of traditionally schooled students in overall college GPA.

3. Homeschooled students' mean academic performance will not be significantly higher than that of traditionally schooled students in major GPA.

4. Homeschool students' mean academic performance will not be significantly higher than that of traditionally schooled students in core GPA.

As the independent variable was categorical and the dependent variable was continuous, an independent-samples *t* test was used as the statistic for analyzing data. Moreover, in view of the fact that the writer's sample size was larger than that required by the central limit theorem, normal distribution of sample means was assumed. The alpha level was set at .05, and a one-tailed test was used in favor of homeschooled students having higher academic achievement levels. The bias towards homeschooled students was the result of extensive literature support in favor of homeschooled students. After *p*-values were calculated, results were used to determine statistical significance and consequently either reject or fail to reject the null hypotheses.

In addition to providing mere yes or no answers to the writer's first four research questions, the purpose of an evaluation, according to Davidson (2005), is to determine the quality or value of the evaluand in a particular context. Thus, a major component of the writer's applied dissertation is in Chapter 5, where the writer discusses Research

Question 5 and ultimately assesses the merit or value of the evaluand, homeschooled students, in regards to their academic achievement at the focus institution. Such information should prove useful to university administration and all stakeholders.

The major evaluative criteria, or dimensions, chosen for assessing student academic achievement included the following: Dimension 1, overall SAT or ACT scores; Dimension 2, overall college GPA; Dimension 3, GPA by major; and Dimension 4, core GPA. Moreover, knowing the importance of the criteria is essential for any good evaluation. Such knowledge allows one to "prioritize improvements, identify whether identified strengths or weaknesses are serious or minor, and/or work out whether an evaluand with mixed results is doing fairly well, quite poorly, or somewhere in between" (Davidson, 2005, p. 101).

Each dimension was judged equally important, for its own reasons, to assessing the overall value of the evaluand: academic aptitude and achievement at the focus institution. Such information was assessed via both personal communication with stakeholders and consulting the literature. SAT and ACT scores, as previously mentioned, are important in so much as they serve as the major criterion for college admission (Hsu & Schombert, 2010). Furthermore, according to Hsu and Schombert (2010), SAT and ACT scores carry with them considerable predictive power in determining student academic performance in college. However, once accepted into college, overall college GPA becomes just as important in measuring actual student learning and growth; as such, GPA is an important criterion for determining academic success in college (Graunke & Woosley, 2005). Nevertheless, according to Graunke and Woosley (2005), overall GPA can be a bit unreliable when comparing students who have taken different courses (i.e., some students take more or less rigorous courses than

others), and thus examining GPA by major and core GPA becomes important for correcting this variation and measuring student academic achievement in college.

After determining the dimensional importance used in assessing the overall value or quality of the evaluands, the next step in any sound evaluation is merit determination (Davidson, 2005). According to Davidson (2005), merit determination is defined as the setting of standards of what is considered excellent performance, good performance, satisfactory performance, and so on. Such determination can be seen in college exams. For example, in a typical grading scale, > 90% = A, 80-89% = B, 70-79% = C, 60-69% = D, and < 60% = F. Subsequently, these letter grades are then used to convey meaning about the overall quality of student performance; A = excellent, B = good, C = satisfactory, and so on. However, this is only one example of merit determination based on a single quantitative dimension.

Additionally, in any evaluation, a substantial overlap between merit and value determination is common (Davidson, 2005). The ultimate purpose of this applied research study was to evaluate the academic achievement of homeschooled students compared to traditionally schooled students attending a Catholic university. Therefore, once data were collected and analyzed, and the first four research questions were answered, the data were converted directly into a rating of the value of homeschooled students attending the focus institution, which was used to answer Research Question 5. The rubric in Table 1, designed by the writer, was used to assess the value of homeschooled students. According to Davidson (2005), relative value, as opposed to absolute value, is helpful in determining how valuable a person or program is relative to peers or competitors, respectively. Relative value was used in this study.

At the beginning of this procedure, the writer mentioned that Scriven's (2003)

KEC would be used to provide the overarching framework for this evaluation. Several core elements of Scriven's (2003) KEC were used. The writer (a) presented an overview of the evaluand, (b) described the main purpose of the evaluation, (c) articulated the overall research design, (d) presented background and context of the evaluand and evaluation, (e) described the evaluation, (f) described consumers of the evaluation, and (g) provided criteria for determining the relative academic merit or value of the evaluand.

Table 1

Rubric for Determining Relative Value of Homeschooled Students

Relative value	Description
Extremely valuable	Statistically significant difference in all four dimensions
Very valuable	Statistically significant difference in any three dimensions
Valuable	Statistically significant difference in any two dimensions
Marginally valuable	Statistically significant difference in any one dimension
Not noticeably valuable	No statistically significant difference in any dimension

Chapter 4: Results

The purpose of this study was to evaluate the academic achievement of homeschooled students compared to traditionally schooled students attending a Catholic university. Academic achievement was determined by students' SAT or ACT scores and college GPA (overall GPA, major GPA, and core GPA). This applied research study sought to answer the following research questions:

1. Is there a statistically significant difference in overall SAT or ACT scores by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

2. Is there a statistically significant difference in overall college GPA by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

3. Is there a statistically significant difference in GPA by major by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

4. Is there a statistically significant difference in core GPA by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)?

Answers to the first four research questions were used to answer the fifth and final research question: Compared to public-schooled and Catholic-schooled students, how much academic merit or value do homeschooled students bring to a Catholic university (the focus institution)? The writer's hypotheses were that homeschooled students would outperform traditionally schooled students in all categories of academic achievement, resulting in superior academic merit or value.

The commensurate null hypotheses to the above-mentioned research questions were the following:

1. Homeschooled students' mean SAT or ACT scores will not be statistically significantly higher than those of public-schooled and Catholic-schooled students.

2. Homeschooled students' mean overall college GPA will not be statistically significantly higher than that of public-schooled and Catholic-schooled students.

3. Homeschooled students' mean major GPA will not be statistically significantly higher than that of public-schooled and Catholic-schooled students.

4. Homeschooled students' mean core GPA will not be statistically significantly higher than that of public-schooled and Catholic-schooled students, resulting in no noticeable academic merit of homeschooled students for the focus institution. The alpha level for the null hypotheses was set at .05. Results were used to either reject or fail to reject the null hypotheses, which were in turn used to assign academic merit or value to homeschooled students.

The procedures used for this evaluative study followed Scriven's (2003) KEC (see Chapter 3). This chapter provides both descriptive and inferential results of the evaluation based on the research questions mentioned above. The overall findings of the evaluation, implications, and recommendations for the future research are discussed in Chapter 5.

Descriptive Results of the Evaluation

Demographic information. The sample population for this study included all first-time college undergraduate students ($N = 408$) enrolled in the focus institution between Fall 2007 and Fall 2010, who previously attended 4 years of a single secondary school type. Of these, 137 students (33.6%) were public schooled, 142 (34.8%) were Catholic schooled, and 129 (31.6%) were homeschooled. Transfer students were excluded from the study as well as any and all students who did not meet the criterion of attending a single secondary school type for all 4 years. Appendix A lists all demographic information.

Calculation of descriptive statistics. For the purpose of descriptively analyzing the data, the researcher used Microsoft Excel 2007. Spreadsheets were created for the following categories: SAT scores, ACT scores, overall college GPA, major GPA, and core GPA. Data were entered for each group of students—public-schooled, Catholic-schooled, and homeschooled students—under these categories. Once the data were entered, the researcher used Microsoft Excel 2007 to calculate mean scores and standard deviations. The researcher further determined frequency and percentage frequency and used Microsoft Excel 2007 to produce histograms.

Descriptive statistics for ACT composite scores. In regards to standardized admission tests, students at the focus institution are required to submit either SAT or ACT scores. Each student was reported as submitting SAT scores, ACT scores, or both. The total sample size of ACT scores analyzed included 219 freshmen though senior students ($N = 219$). One hundred students were public schooled, 59 students were Catholic schooled, and 60 students were homeschooled. As shown in Table 2, the mean ACT composite score of Catholic-schooled students (24.53) was found to be a little bit lower than the total mean (24.73). Moreover, the mean ACT composite score of public-schooled students (24.22) was found to be the lowest of the groups, and the mean ACT composite score of homeschooled students (26.00) was found to be the highest of the groups analyzed. Standard deviations are also shown in Table 2. Approximately 75% of public-schooled students fell within one standard deviation around the mean, as did approximately 66% of Catholic-schooled students and approximately 76% of homeschooled students. The higher percentage of public-schooled and homeschooled students, compared to Catholic-schooled students, indicated that more of these students were clustered around the mean; however, normal distribution of data was still apparent.

According to the empirical rule, if distribution follows a bell curve, one would expect approximately 68% of data points to fall within one standard deviation around the mean, 95% of data points to fall within two standard deviation around the mean, and 99.7% to fall within three standard deviations around the mean (Donnelly, 2007).

Table 2

Descriptive Statistics for ACT Composite Score by School Type

School type	Mean	*SD*	*n*
Public schooled	24.22	3.81	100
Catholic schooled	24.53	4.54	59
Homeschooled	26.00	4.43	60
Total	24.73	4.20	219

The range of ACT scores was 20, with 15 as the lowest score and 35 as the highest score out of a total of 219 scores. A single Catholic-schooled student was reported as having the lowest ACT score (15), and a single homeschooled student was reported as having the highest ACT score (35). There were more homeschooled students (51, or 85%) with an ACT score of 22 and higher compared to Catholic-schooled students (44, or 75%); more public-schooled students (72) had an ACT score of 22 or higher, but the percentage of these public-schooled students (72%) was still lower when compared to homeschooled and Catholic-schooled students. The percentage frequencies of ACT scores, for all school types, are shown in Table 3.

Table 3

Distribution of ACT Scores for All Students

ACT score range	*n*	*%*
15-19	22	10.1
20-24	95	43.4
25-29	64	29.1
30-35	38	17.4

See Appendix B for detailed frequency data on ACT composite scores. See Figure

1 for a graphical representation of ACT composite scores by secondary school type.

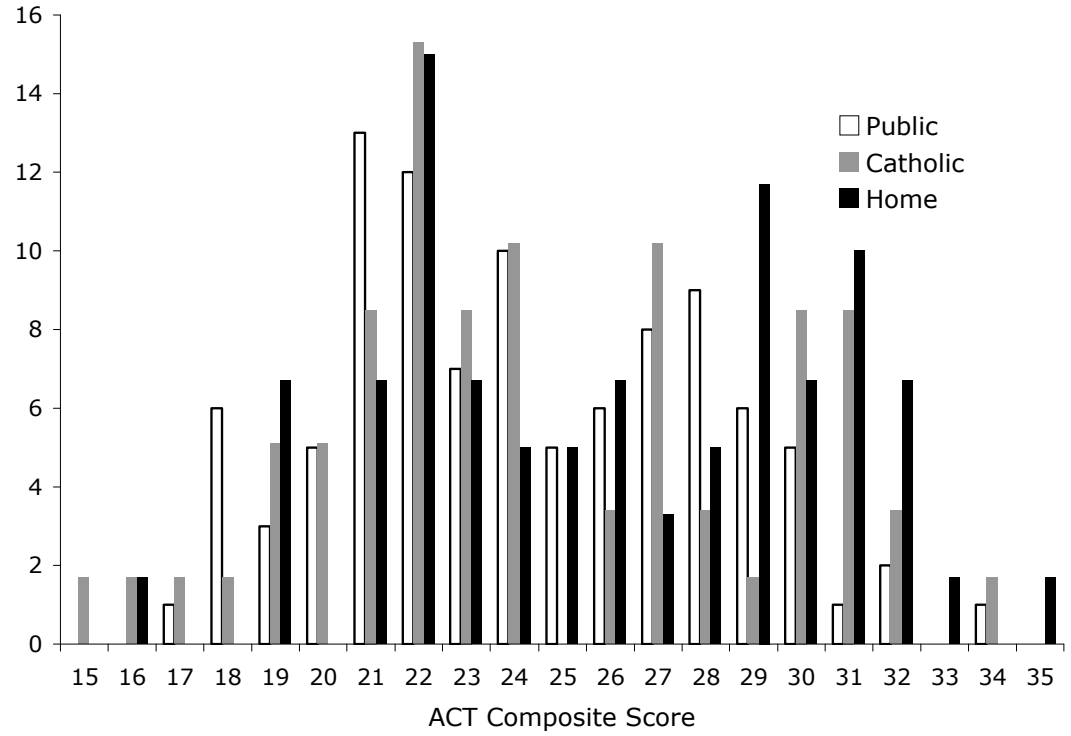

Figure 1. Histogram of ACT composite scores by secondary school type.

Descriptive statistics for SAT total scores. The total sample size of SAT scores analyzed was 265 freshmen through senior students. Seventy-four students were public schooled, 106 students were Catholic schooled, and 85 students were homeschooled. Similar to ACT composite scores, the mean SAT total score of Catholic-schooled students (1706.76) was found to be a little bit lower than the total mean (1779.36). Moreover, the mean SAT total score of public-schooled students (1706.76) was found to be the lowest, and the mean SAT total score of homeschooled students (1864.94) was found to be the highest. Means and standard deviations are presented in Table 4. Approximately 68% of public-schooled students and Catholic-school students fell within one standard deviation around the mean, as did approximately 67% of homeschooled students. The distribution of data was consistent with a near-perfect bell curve for all

school types.

Table 4

Descriptive Statistics for SAT Total Score by School Type

School type	Mean	*SD*	*n*
Public schooled	1706.76	219.34	74
Catholic schooled	1761.04	245.46	106
Homeschooled	1864.94	250.78	85
Total	1779.36	247.70	265

The range of SAT scores was 1,130, with 1230 as the lowest score and 2360 as the highest score out of a total of 265 students. A single Catholic-schooled student was reported as having the lowest SAT total score (1230) and a single homeschooled student was reported as having the highest SAT total score (2360). There were more homeschooled students (49, or 58%) with an SAT total score of 1850 or higher when compared to public-schooled students (18, or 24%) and Catholic-schooled students (41, or 39%). The percentage frequencies of SAT total scores, for all school types, are presented in Table 5.

Table 5

Distribution of SAT Scores for All Students

SAT score range	*n*	*%*
1200-1500	40	15.1
1501-1800	97	36.6
1801-2100	100	37.7
2101-2400	28	10.6

The SAT total scores with the least frequency were in the 1200-1250 range, 2301-2350 range, and 2351-2400 range, each with one student, or 0.4%. The greatest frequency scores were in the range of 1851-1900 (27 students, or 10.2%). See Appendix C for detailed frequency data on SAT scores. See Figure 2 for a graphical representation of SAT total scores by secondary school type.

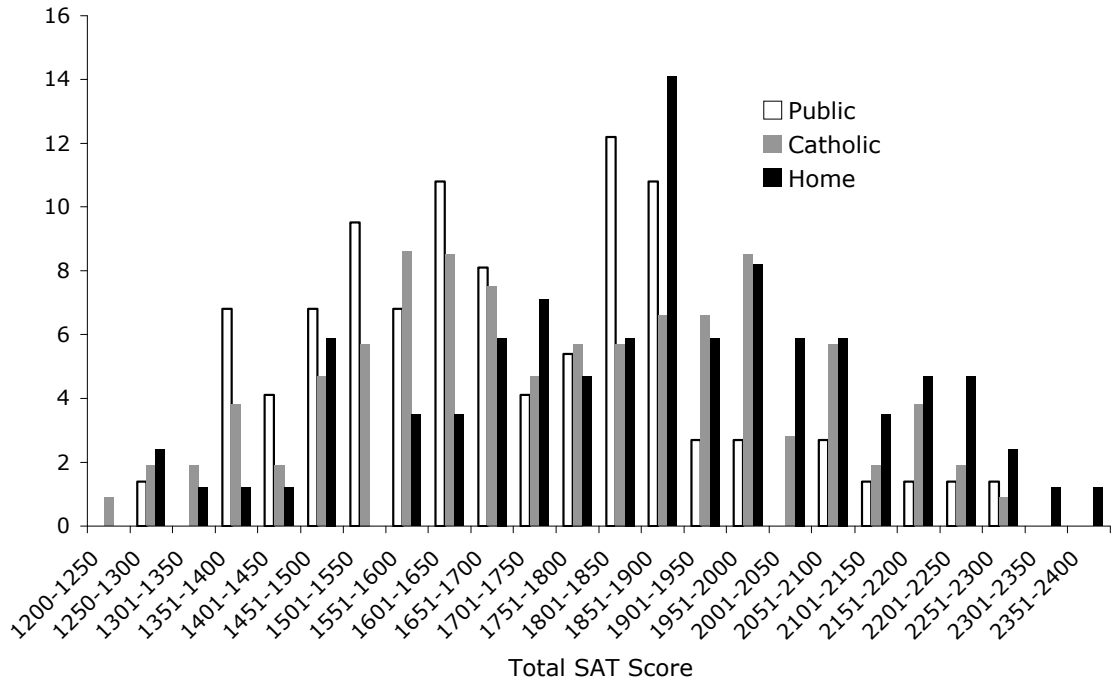

Figure 2. Histogram of SAT composite scores by secondary school type.

Descriptive statistics for overall GPA. The total sample size of overall GPA analyzed was 408 freshmen through upper division senior students. Of these, 137 students were public schooled, 142 were Catholic schooled, and 129 were homeschooled. Overall GPA included overall student academic performance in all subjects. For example, overall GPA included grades obtained in any and all general-education, required courses (core courses) as well grades obtained in major-specific courses.

Similar to ACT composite scores and SAT total scores, the mean overall GPA of Catholic-schooled students (2.88) was found to be a little bit lower than the total mean (2.89). Moreover, the mean overall GPA of public-schooled students (2.66) was found to be the lowest, and the mean overall GPA of homeschooled students (3.14) was found to be the highest. Means and standard deviations are shown in Table 6. None of the grades used to determine GPA were weighted due to honors classes. Approximately 66% of public-schooled students fell within one standard deviation around the mean, as did

approximately 65% of Catholic-schooled students and approximately 64% of homeschooled students. Similar to SAT total scores, the distribution of overall GPA data was consistent with a near-perfect bell curve for all school types.

Table 6

Descriptive Statistics for Overall Grade-Point Average by School Type

School type	Mean	*SD*	*n*
Public schooled	2.66	0.8662	137
Catholic schooled	2.88	0.7103	142
Homeschooled	3.14	0.6787	129
Total	2.89	0.7806	408

The range of overall GPA was 4.00, with 0.00 as the lowest GPA and 4.00 as the highest GPA out of a total of 408 students. A single public-schooled student was reported as having the lowest GPA (0.00, with no reason given), and at least one student from all three secondary school types—public-schooled, Catholic-schooled, and homeschooled students (two)—had an overall GPA of 4.00. The percentage frequencies of overall GPA, for all school types, are shown in Table 7.

Table 7

Distribution of Overall Grade-Point Average (GPA) for All Students

Overall GPA range	*n*	*%*
0.00-1.00	8	2.0
1.01-2.00	46	11.3
2.01-3.00	162	39.7
3.01-4.00	192	47.0

Almost half of the students analyzed averaged above a 3.00 GPA; there were more homeschooled students (81, or 63%) with a GPA of 3.00 or higher when compared to public-schooled students (48, or 35%) and Catholic-schooled students (63, or 44%). The overall GPA ranges with the least frequency (two students each, or 0.5%) were 0.00-

0.25, 0.26-0.50, 0.51-0.75, 0.76-1.00, and the 1.01-1.25 range. The greatest frequency scores were in the 3.51-3.75 range (58 students, or 14.2%). Appendix D contains detailed frequency information of overall GPA. Figure 3 provides a graphical representation of overall GPA by secondary school type.

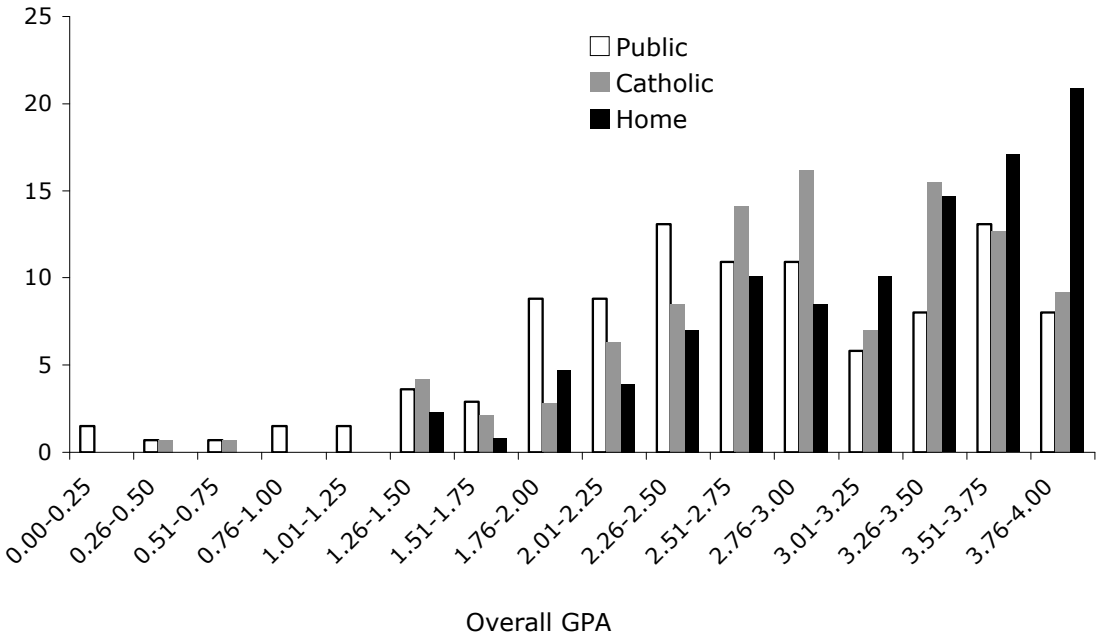

Figure 3. Histogram of overall grade-point average (GPA) by secondary school type.

The mean overall GPAs for the freshmen, sophomore, junior, and senior classes of public-schooled, Catholic-schooled, and homeschooled students were broken down into academic achievement by class level. The greatest disparity for secondary school type and GPA by class level was found in the freshmen and sophomore classes, as shown in Table 8.

Descriptive statistics for major GPA. The total sample size of major GPAs analyzed was 164 upper division junior and senior students. Juniors and seniors were included in the analysis because only these students had completed the required core curriculum and had reported grades for courses associated with a major. However, individual student majors were not separately identified and analyzed in this study.

According to the focus institution's website, students have the option to choose from 12 majors in pursuit of a Bachelor of Arts degree.

Table 8

Mean Overall Grade-Point Average by Class Level and Secondary School Type

School type	Freshmen	Sophomores	Juniors	Seniors
Public schooled	2.42	2.68	2.96	3.08
Catholic schooled	2.62	2.87	2.95	3.31
Homeschooled	3.31	3.09	2.98	3.26

Forty-two students were public schooled, 54 were Catholic schooled, and 68 were homeschooled. Unlike the mean ACT composite scores, SAT total scores, and overall GPA, the mean major GPAs by secondary school type were relatively similar. Nevertheless, the mean major GPA of Catholic-schooled students (3.11) was still found to be a little bit lower than the total mean (3.14). Moreover, the mean major GPA of public-schooled students (3.07) was found to be the lowest, and the mean major GPA of homeschooled students (3.20) was found to be the highest. Means and standard deviations are shown in Table 9.

Table 9

Descriptive Statistics for Major Grade-Point Average by School Type

School type	Mean	*SD*	*n*
Public schooled	3.07	0.7516	42
Catholic schooled	3.12	0.5358	54
Homeschooled	3.20	0.6477	68
Total	3.14	0.6410	164

Approximately 71%, 65%, and 71% of public-schooled, Catholic-schooled, and homeschooled students, respectively, fell within one standard deviation around the mean. The range of major GPA was 3.77, with 0.23 as the lowest GPA and 4.00 as the highest

GPA out of total of 164 students. A single public-schooled student was reported as having the lowest major GPA of 0.23, and a single public-schooled student and three homeschooled students were reported as having the highest major GPA of 4.00. The percentage frequencies of major GPA, for all school types, are shown in Table 10.

Table 10

Distribution of Major Grade-Point Average (GPA) for All Students

Major GPA range	*n*	*%*
0.00-1.00	1	0.6
1.01-2.00	7	4.4
2.01-3.00	53	32.2
3.01-4.00	103	62.8

More than three fifths of the students analyzed averaged above a 3.00 GPA; there was a higher percentage of public-schooled (62%) and Catholic-schooled students (61%) with a GPA of 3.00 or higher when compared to homeschooled students (57%). The major GPA ranges with the least frequency were 0.26-0.50, 0.51-0.75, 0.76-1.00, and 1.01-1.25, each with no students. The greatest frequency scores were in the 3.51-3.75 and 3.76-4.00 ranges (28 students each, or 17.1%). Appendix E shows detailed frequency data on major GPA. See Figure 4 for a graphical representation of major GPA by secondary school type.

Descriptive statistics for core GPA. The total sample size of core GPAs analyzed was 165 upper division junior and senior students. Forty-two students were public schooled, 54 were Catholic schooled, and 69 were homeschooled. Junior and senior students only were included in the analysis because only these upper division students had completed the core curriculum. As previously indicated, the core curriculum consists of the students' first 64 credits. According to the focus institution's website, the

core curriculum provides students the opportunity to take courses in the tradition of the liberal arts and fine arts. Core GPA was determined based on grades earned in these credits.

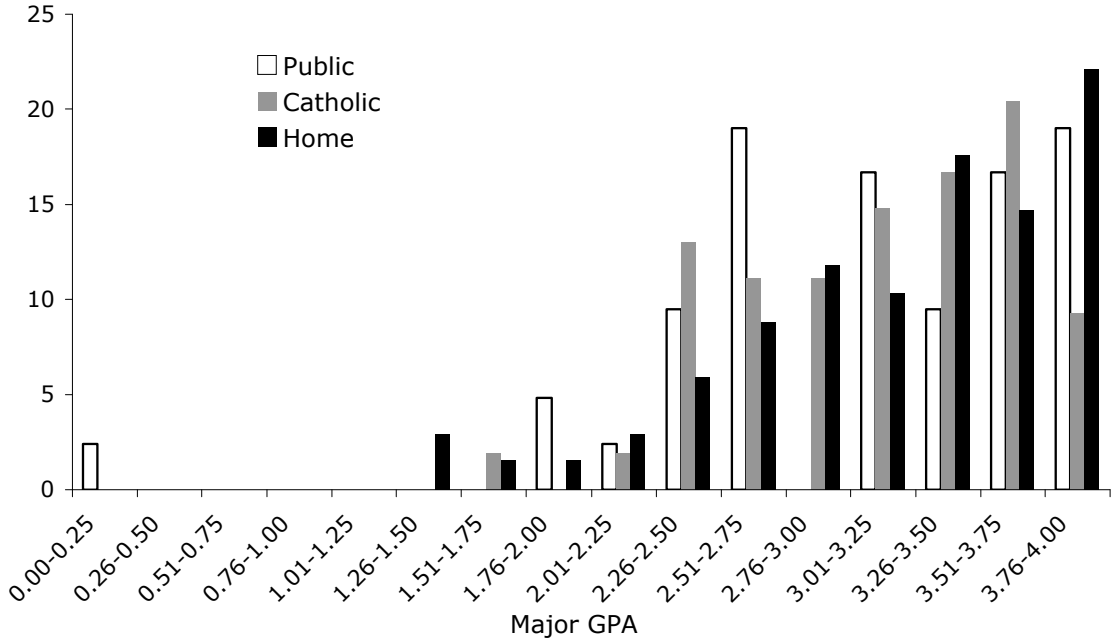

Figure 4. Histogram of college-major grade-point average (GPA) by secondary school type.

Similar to the mean major GPA, the mean core GPAs by secondary school type were relatively similar. Nevertheless, the mean core GPA of Catholic-schooled students (3.02) was still found to be a little bit lower than the total mean (3.04). Moreover, the mean major GPA of public-schooled students (2.97) was found to be the lowest, and the mean major GPA of homeschooled students (3.11) was found to be the highest. Table 11 shows means and standard deviations. Approximately 55% of public-schooled students fell within one standard deviation around the mean, as did 63% of Catholic-schooled students and 61% of homeschooled students.

The range of core GPA was 2.98, with 1.02 as the lowest GPA and 4.00 as the highest out of a total of 165 students. A single homeschooled student was reported as having the lowest core GPA of 1.02, and a single public-schooled student was reported as

having the highest core GPA of 4.00. The percentage frequencies of core GPA, for all school types, are shown in Table 12.

Table 11

Descriptive Statistics for Core Grade-Point Average (GPA) by School Type

School type	Mean	*SD*	*n*
Public schooled	2.97	0.6468	42
Catholic schooled	3.02	0.5262	54
Homeschooled	3.11	0.6614	69
Total	3.04	0.6156	165

Table 12

Distribution of Core Grade-Point Average (GPA) for All Students

Core GPA range	*n*	*%*
0.00-1.00	0	0.0
1.01-2.00	9	5.4
2.01-3.00	63	38.2
3.01-4.00	93	56.4

More than half the students analyzed averaged above a 3.00 GPA; there were more homeschooled students (43, or 62%) with a GPA of 3.00 or higher when compared to public-schooled (21, or 50%) and Catholic-schooled students (29, or 54%). The core GPA ranges with the least frequency were 0.00-0.25, 0.26-0.50, 0.51-0.75, and 1.51-1.75 (all with no students). The greatest frequency scores were in the 3.26-3.50 range (28 students, or 17.0%). Appendix F shows detailed frequency data on core GPA. See Figure 5 for a graphical representation of core GPA by secondary school type.

Inferential Results of the Evaluation

A one-tailed, independent-samples *t* test, in favor of homeschooled students, was used to determine if a statistically significant difference existed between homeschooled students and their public-schooled and Catholic-schooled peers in the categories of

overall SAT or ACT scores and college GPA (overall GPA, major GPA, and core GPA). With an alpha level of .05, the mean SAT or ACT scores and mean GPAs, standard deviations, and sample sizes of homeschooled, public-schooled, and Catholic-schooled students were used to determine *p*-values, which in turn were used to determine statistical significance. The determination of statistical significance was used to reject or fail to reject the previously mentioned null hypotheses and therefore answer the five research questions.

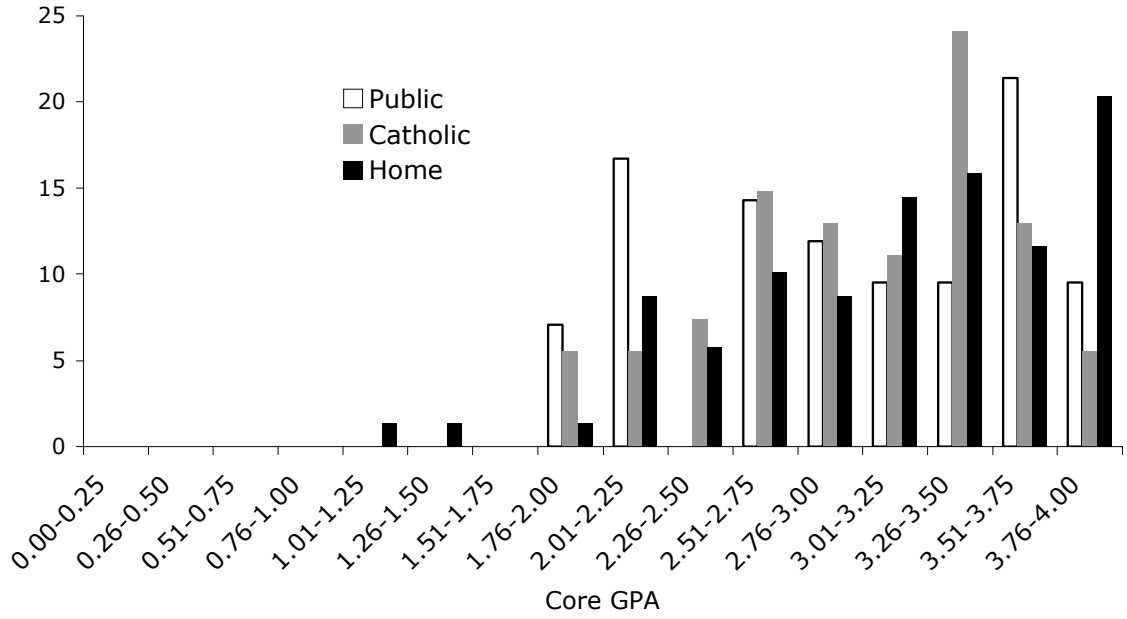

Figure 5. Histogram of core-curriculum grade-point average (GPA) by secondary school type.

Research Question 1

The first research question included two parts: ACT scores and SAT scores. The first part of Research Question 1 was as follows: Is there a statistically significant difference in ACT composite scores by secondary school type (homeschooled, public-schooled and Catholic-schooled students)? The null hypothesis was that homeschooled students' ACT scores would not be statistically significantly higher than those of public-schooled and Catholic-schooled students.

The result was that a significant difference was found between homeschooled and public-schooled students at a value of $p = .005$. A significant difference was also found between homeschooled and Catholic-schooled students at a value of $p = .038$. Therefore, the null hypothesis was rejected and the first part of Research Question 1 was answered in the affirmative. The results of the independent-samples *t* test for the first part of Research Question 1 regarding ACT scores are presented in Table 13.

Table 13

Independent-Samples t-Test Results for ACT Composite Score by School Type

School type comparison	*t*	*p*	*df*
Public schooled vs. homeschooled	-2.5911	.0054**	110.2058
Catholic schooled vs. homeschooled	-1.7883	.0382*	116.7944

*$p < .05$. **$p < .01$.

The second part of Research Question 1 was as follows: Is there a statistically significant difference in overall SAT scores by secondary school type (homeschooled, public-schooled and Catholic-schooled students)? The null hypothesis was that homeschooled students' mean SAT scores would not be statistically significantly higher than those of public-schooled and Catholic-schooled students.

The result was that a significant difference was found between homeschooled and public-schooled students at a value of $p = .00001$. A significant difference was also found between homeschooled and Catholic-schooled students at a value of $p = .002$. Therefore, the null hypothesis was rejected and the second part of Research Question 1 was answered in the affirmative. The results of the independent-samples *t* test for the second part of Research Question 1 regarding SAT scores are presented in Table 14.

Research Question 2

The second research question was as follows: Is there a statistically significant

difference in overall college GPA by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)? The null hypothesis was that homeschooled students' mean overall college GPA would not be statistically significantly higher than that of public-schooled and Catholic-schooled students.

Table 14

Independent-Samples t-Test Results for SAT Score by School Type

School type comparison	*t*	*p*	*df*
Public schooled vs. homeschooled	-4.2427	.00002***	156.9953
Catholic schooled vs. homeschooled	-2.8725	.00228**	178.4031

**$p < .01$. ***$p < .001$.

The result was that a significant difference was found between homeschooled and public-schooled students at a value of $p = .0000002$. A significant difference was also found between homeschooled and Catholic-schooled students at a value of $p = .001$. The results of the independent-samples *t* test for Research Question 2 are presented in Table 15. Therefore, the null hypothesis was rejected, and the second research question was answered in the affirmative.

Table 15

Independent-Samples t-Test Results for Overall Grade-Point Average by School Type

School type comparison	*t*	*p*	*df*
Public schooled vs. homeschooled	-5.1280	.0000003***	255.6712
Catholic schooled vs. homeschooled	-3.0220	.0013769**	268.3068

**$p < .01$. ***$p < .001$.

Additionally, when individual class levels were compared, a statistically significant difference was found between the freshman and sophomore classes. However, no statistically significant difference was found between the junior and senior classes (see Table 16).

Table 16

Independent-Samples t-Test Results for Overall Grade-Point Average by School Type and Class Level

School type comparison	*t*	*p*	*df*
Freshmen			
Public schooled vs. homeschooled	-4.7860	.000006***	59.8350
Catholic schooled vs. homeschooled	-3.1344	.001341**	59.0355
Sophomores			
Public schooled vs. homeschooled	-2.4735	.008067**	61.9693
Catholic schooled vs. homeschooled	-1.3840	.085326	72.0958
Juniors			
Public schooled vs. homeschooled	-0.1151	.454427	44.5530
Catholic schooled vs. homeschooled	-0.2144	.415440	64.8167
Seniors			
Public schooled vs. homeschooled	-0.9774	.167178	39.2895
Catholic schooled vs. homeschooled	0.2935	.614841	50.9643

*$p < .05$. **$p < .01$. ***$p < .001$.

Research Question 3

The third research question was as follows: Is there a statistically significant difference in GPA by major by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)? As previously mentioned in the descriptive statistics, in this study, individual majors were not separately identified and analyzed. The null hypothesis was that homeschooled students' mean major GPA would not be statistically significantly higher than that of public-schooled and Catholic-schooled students.

The result was that no significant difference was found between homeschooled and public-schooled students ($p = .177$). No significant difference was also found between homeschooled and Catholic-schooled students ($p = .212$). Therefore, the null hypothesis was not rejected, and the third research question was answered in the negative. The results of the independent-samples *t* test for Research Question 3 are

presented in Table 17.

Table 17

Independent-Samples t-Test Results for Major Grade-Point Average by School Type

School type comparison	*t*	*p*	*df*
Public schooled vs. homeschooled	-0.9287	.17797	77.2890
Catholic schooled vs. homeschooled	-0.8003	.21255	119.7815

Research Question 4

The fourth research question was as follows: Is there a statistically significant difference in core GPA by secondary school type (homeschooled, public-schooled, and Catholic-schooled students)? The null hypothesis was that homeschooled students' mean core GPA would not be statistically significantly higher than that of public-schooled and Catholic-schooled students.

The result was that no significant difference was found between homeschooled and public-schooled students ($p = .133$). No significant difference was found between homeschooled and Catholic-schooled students ($p = .211$). Therefore, the null hypothesis was not rejected, and the fourth research question was answered in the negative. The results of the independent-samples *t* test for Research Question 4 are presented in Table 18.

Table 18

Independent-Samples t-Test Results for Core Grade-Point Average by School Type

School type comparison	*t*	*p*	*df*
Public schooled vs. homeschooled	-1.1161	.13370	88.2526
Catholic schooled vs. homeschooled	-0.8057	.21101	120.9593

Research Question 5

Research Question 5 was as follows: Compared to public-schooled and Catholic-schooled students, how much academic merit or value do homeschooled students bring to a Catholic university? A rubric designed by the researcher in Chapter 3 (Table 1) was meant to answer this question by equating statistical significance in the categories of SAT or ACT scores, overall college GPA, GPA by major, and core GPA, with varying levels of academic merit or value. According to the rubric, statistical significance in no categories equated to not noticeably valuable, statistical significance in any one category equated to marginally valuable, statistical significance in any two categories equated to valuable, statistical significance in any three categories equated to very valuable, and statistical significance in all four categories equated to extremely valuable. A statistically significant difference was found between homeschooled students and traditionally schooled students in two categories (ACT or SAT scores and overall GPA). Major GPA and core GPA did not show any statistically significant difference. Therefore, the answer to Research Question 5 is that homeschooled students are academically valuable when compared to public-schooled and Catholic-schooled students.

Summary

In summary, for the sample population of students attending the focus institution, academic achievement was measured using the following categories: SAT or ACT scores, overall college GPA, major GPA, and core GPA. Homeschooled students scored higher (mean) than public-schooled students and Catholic-schooled students in each academic category. Public-schooled student had the lowest mean in each category, whereas Catholic-schooled students averaged closest to the total mean in each category. Some exceptions were found when individual class levels and GPA by school type were

analyzed. For example, senior-level, Catholic-schooled students had a higher mean GPA than both public-schooled and homeschooled students.

As indicated by the independent-samples *t*-test results, a statistically significant difference was found between homeschooled students and both public-schooled and Catholic-schooled students in ACT and SAT scores (Tables 13 and 14). As a result, the null hypothesis was rejected, and the answer to Research Question 1 was yes. In regards to overall GPA, a statistically significant difference was also found between homeschooled students and both public-schooled and Catholic-school students (Table 15). As a result, the null hypothesis was also rejected and the answer to Research Question 2 was yes. A statistically significant difference was found between freshmen and sophomore homeschooled students when compared to public-schooled and Catholic-schooled students in overall GPA. However, no statistically significant difference was found between junior and senior homeschooled students when compared to public-schooled and Catholic-schooled students in overall GPA. In regards to major GPA, no statistically significant difference was found between homeschooled students when compared to public-schooled and Catholic-schooled students. Therefore, the null hypothesis was not rejected and the answer to Research Question 3 was no (Table 17). In regards to core GPA, no statistically significant difference was found between homeschooled students and either public-schooled or Catholic-schooled students. Therefore, the null hypothesis was not rejected, and the answer to Research Question 4 was no (Table 18).

The answers to the first four research questions were used to answer the fifth and final research question, the evaluation question. According to the rubric designed in Chapter 3 (Table 1), academic merit or value was determined by equating statistical

significance to equally weighted academic categories. A statistically significant difference in no categories was equated to being not noticeably valuable, a statistical significant difference in any one category was equated to being marginally valuable, a statistical significant difference in any two categories was equated to being valuable, a statistically significant difference in any three categories was equated to being very valuable, and a statistically significant difference in all four categories was equated to being extremely valuable. Homeschooled students were found to score statistically significantly higher than public-schooled and Catholic-schooled students in two categories, ACT or SAT scores and overall GPA; thus, the answer to Research Question 5 is that homeschooled students are academically valuable to the focus institution. A discussion of these results is presented in Chapter 5.

Chapter 5: Discussion

Overview of the Applied Dissertation

The purpose of this applied research study was to evaluate the academic aptitude and achievement of homeschooled students compared to traditionally schooled students attending a Catholic university. Despite the literature deficit on the academic achievement of homeschooled students in a Catholic university, many studies have been conducted giving support to the academic abilities of homeschooled students in college (e.g., Cogan, 2010; Galloway, 1995; Gray, 1998; Holder, 2001; Jenkins, 1998; Jones & Gloeckner, 2004a, 2004b; Ray, 2004b; Ray & Eagleson, 2008; Rudner, 1999; Sutton & Galloway, 2000; Wichers, 2001). Moreover, according to Ray (2004b), homeschoolers consistently score higher on average, at the 65th to 80th percentile on standardized achievement tests, compared to public school students, who score on average at the 50th percentile. The academic achievement of homeschooled students is not limited to families whose parents have attained high educational outcomes or to families whose income level is high. Research has revealed that there is no correlation between a parent's teacher certification or state control of homeschooling and the academic achievement of homeschooled students (Ray, 2004b).

This applied research study collected archival data from a liberal arts, Catholic university located in South Florida. The sample size included 408 first-time college students enrolled between Fall 2007 and Fall 2010. Based on their secondary school type, 137 students were classified as public schooled, 142 students were classified as Catholic schooled, and 129 students were classified as homeschooled. Only students who attended a single secondary school type for all 4 years were included in this study. Academic aptitude and achievement was measured by students' SAT or ACT scores, overall college

GPA, major GPA, and core GPA (or general-education GPA). Based on how homeschooled students performed academically in comparison to the public-school and Catholic-schooled students, homeschooled students were assigned a certain degree of academic merit or value. This chapter discusses the results presented in Chapter 4, offers an overall conclusion and summary, presents implications of the findings, discusses limitations, and offers some recommendation for the university and for future research.

Discussion of Results

ACT and SAT scores. ACT and SAT scores have long been used as both valid and reliable predictors of academic aptitude and achievement (Cornwell et al., 2008; DeBerard et al., 2004; Horn, 2006; Kim et al., 2010; Kobrin et al., 2008). This study revealed that, on average, homeschooled students outperformed both public-schooled and Catholic-schooled students in regards to ACT composite scores and SAT total scores. Furthermore, the difference was statistically significant, in favor of homeschooled students. This finding is consistent with the literature, which supported the statement that homeschooled students do as well, if not better than, their traditionally schooled counterparts on the ACT (Cogan, 2010; Galloway, 1995; Jones & Gloeckner, 2004a; Wichers, 2001) and SAT (Clemente, 2006; Gray, 1998). For the purposes of comparing both ACT and SAT scores, undergraduate freshmen through senior class levels were included in the analysis.

Overall GPA. Once undergraduate students have been admitted to college, according to Pascarella and Terenzini (2005), grades become the all-important indicator for determining academic achievement. This study revealed that on average, in regards to overall college GPA, homeschooled students outperformed both public-schooled and Catholic-schooled students. Furthermore, the difference was statistically significant, in

favor of homeschooled students. Once again, the professional literature supported the results that homeschooled students do as well, if not better than, their traditionally schooled counterparts in GPA in college (Sutton & Galloway, 2000). Like ACT and SAT scores, for the purposes of comparing overall college GPA, undergraduate freshmen through senior class levels were included in the analysis.

It is important to note, however, that when undergraduate class levels were analyzed separately, no statistically significant difference was found between homeschooled students and traditionally-schooled students in the junior and senior class levels. In the freshmen and sophomore classes a statistically significant difference was found between homeschooled students and both public-schooled and Catholic-schooled students. However, when comparing secondary school type and GPA in the junior class, very little difference was found. On average, public-schooled students had a higher GPA (2.96) than Catholic-schooled students, and homeschooled students barely edged out both groups with a GPA of 2.98. Furthermore, when comparing secondary school type and GPA in the senior class, similar results were found: Catholic-schooled students had a higher GPA (3.31) than homeschooled students (3.26), and public-schooled students had a still impressive mean GPA of 3.08. Such results seem to indicate that as students progress through their college career, the variable of secondary school type becomes less important as a determinant of academic achievement.

Major GPA. Included in this study was a comparison of secondary school type and major GPA. According to the focus institution's website, students have the opportunity to choose from 12 majors: biology, business, classics, economics, history, literature, mathematics, music, philosophy, politics, psychology, and theology. Results indicated that, on average, the homeschooled students outperformed public-schooled and

Catholic-schooled students in regards to major GPA. However, no statistically significant difference was found. It is important to note that individual majors were not separately analyzed. The writer did not know if the majority of homeschoolers pursued more difficult majors, such as the natural sciences or mathematics, or if there was a more even distribution of pursuit of majors. The same can be said about the public-schooled and the Catholic-schooled students; the writer did not know the breakdown of majors. Nevertheless, the results of the study are consistent with the literature, which has shown that homeschooled students are on par with their traditionally schooled counterparts in regards to major GPA (Sutton & Galloway, 2000). Since only upper division junior and senior students begin to take courses associated with their major, only these students were included in the analysis.

Core GPA. Key to this study was an examination of secondary school type and core GPA. According to the focus institution's website, the core curriculum, or general-education requirement, consists of 64 out of 128 liberal arts and science credits required for graduation. The curriculum is designed to include carefully selected courses. Such courses include the following: three courses in theology (Sacred Scripture, Sacred Doctrine, and Moral Theology), three courses in philosophy (Nature and Person, Ethics, and Metaphysics), two courses in history (Western Civilization I and II), two courses in literature (Literary Tradition I and II), two courses in Latin, two courses in the natural sciences, American civilization, and one course in mathematics. In addition, students are expected to take two noncredited courses in the fine arts, including Gregorian Chant and a second elective course. Since all students must fulfill the core requirements, comparing core GPA provided an objective measure for evaluating the correlation between secondary school type and academic achievement. The study revealed that, on average,

homeschooled students outperformed both public-schooled and Catholic-schooled students in regards to core GPA. However, no statistically significant difference was found. Only students who completed the core requirement, upper-division juniors and seniors, were included in the analysis.

Academic merit or value. The guiding framework for this study's evaluation was Scriven's (2003) KEC with several simplifications and modifications. The elements used in the KEC included the following: (a) overview of the evaluand, (b) main purpose of the evaluation, (c) research design (correlative), (d) background and context of the evaluand and evaluation, (e) description of the evaluation (i.e., summative and goal free), (f) consumers of the evaluation, and (g) criteria for determining the value of the evaluand (see Chapter 3 for more details in regards to these first seven steps). The final three steps of the KEC are detailed in this chapter: (h) outcome of the evaluation, (i) overall implications of the findings and significance of the evaluation, and (j) recommendations for the university and for future research.

As previously indicated, the criteria for measuring the academic achievement of the evaluand, academic achievement of homeschooled students, included the following: ACT and SAT scores (linked to Research Question 1), overall college GPA (linked to Research Question 2), major GPA (linked to Research Question 3), and core GPA (linked to Research Question 4). Equal importance was placed on all categories, and a rubric was designed by the researcher for measuring academic merit or value of the homeschooled students. Statistical significance in no categories was equated to being not noticeably valuable, statistical significance in any one category was equated to being marginally valuable, statistical significance in any two categories was equated to being valuable, statistical significance in any three categories was equated to being very valuable, and

statistical significance in all four categories was equated to being extremely valuable.

The results of the study indicated that a statistically significant difference was found in favor of the homeschooled students in the following two academic categories: ACT and SAT scores and overall college GPA. Therefore, according to the rubric, homeschooled students were rated by the researcher as valuable to the focus institution. This rating seems consistent with the literature, which supported that homeschooled students are actively pursued by colleges and perceived by most college admission officers as a valuable academic commodity (Evans, 2001; P. Hahn & Cruickshank, 2006; Jones & Gloeckner, 2004b; Mason, 2004; Pannapaker, 2005; Ray, 2004b; Sorey & Duggan, 2008; Wasley, 2007). Such sentiments are not as unanimous in regards to the social value of homeschooled students (Sorey & Duggan, 2008).

Validity and reliability. The sample population equaled the current population of 4-year homeschooled and traditionally schooled students, so the sample population was treated as a simple random sample. Moreover, as the sample used in this study was large enough (408 students), and the results of the study were normally distributed, the results of the independent-samples *t* tests can be said to possess external validity, or generalizability. This generalizability can be useful in helping to predict the academic achievement of future public-schooled, Catholic-schooled, and homeschooled students attending the focus institution. However, the results of the study might not be generalizable in predicting the academic achievement of future students attending any college or university in general, because the focus institution was not randomly chosen. Nevertheless, the closer the characteristics of a college or university to the focus institution, the more externally valid will be the results in predicting academic achievement. The results of the study are said to possess external validity, and thus it is

reasonable to posit that the same results would also possess reliability as predictors of academic achievement.

As previously mentioned, a correlational design can never prove, with absolute certainty, a cause-and-effect relationship. Therefore, at face value, it would seem that the results of the study possess little internal validity. Nevertheless, the positive correlational relationship between homeschooled students and high levels of academic achievement in all categories of academic achievement as presented in this study as well as the previous studies reviewed seems to suggest that homeschooling in secondary school is more than just an accidental variable when it comes to influencing the academic achievement of homeschooled students. Rather, the homeschooling in secondary school may be a cause of high levels of academic achievement of homeschooled students in college.

Conclusion

According to Lines (2000), the rise in homeschooling, as one of the most significant educational trends of the past half-century, has caused many to ask how well homeschooling has prepared students to move beyond primary and secondary education and succeed academically in college. From a student affairs perspective, college admission officers have reported admitting an increasing number of homeschooled students nationally and have spoken well of them in regards to their ability to compete at the same level academically as traditionally schooled students (Jones & Gloeckner, 2004b). At the same time, many admission officers at public colleges are reluctant to admit homeschooled students, given that many of these students lack a high school diploma or an accredited transcript. Such college admission officers are skeptical in regards to homeschooled students' ability to perform at high levels academically (Sorey & Duggan, 2008). Multiple studies, however, have shown no reason to doubt the

academic ability of homeschooled students in college, finding no difference between these students and traditionally schooled students (Gray, 1998; Jones & Gloeckner, 2004a; Sorey & Duggan, 2008).

The results of this study confirmed what was already known in the education literature about the academic ability of homeschooled students in college and provided empirical data about this ability for the focus institution. As approximately 30% of the student body attending the focus institution come from a homeschooling background, having more than just anecdotal evidence on their ability to achieve high levels of academic success was important. As part of this applied research study, four categories were used as a measure of academic aptitude and achievement, with each category equally weighted and analyzed: (a) ACT and SAT scores, (b) overall college GPA, (c) major GPA, and (d) core GPA. ACT and SAT scores were used as a gauge to measure the academic aptitude of homeschooled students compared to traditionally schooled students. College GPA was used as a gauge to measure the achievement of homeschooled students compared to traditionally schooled students once in college. Overall GPA was used as the measure of overall achievement, major GPA was used to specifically assess achievement within the students' major only, and core GPA was used as an objective measure to compare the achievement of homeschooled students and traditionally schooled through their first 64 credits.

The results of this applied research study showed that the homeschooled students outperformed their traditionally schooled counterparts in all academic categories, with a statistically significant difference found in both ACT and SAT scores and overall GPA. For this study, the writer did not look at persistence rates or degree completion. However, in a study conducted by Cogan (2010), fall-to-spring and fall-to-fall persistence rates for

homeschooled students were comparable to those of traditionally schooled students.

Given the evaluative rubric, the evaluation of homeschooled students attending the focus institution is that they are valuable. These students are just as valuable as, if not more so than, public-schooled and Catholic-schooled students. The rating of valuable was determined by homeschooled students being found to achieve statistically significantly higher than traditionally schooled students in two academic categories.

Implications of Findings

The findings of this applied research study add significant research-based knowledge to the focus institution regarding the academic achievement of homeschooled students. Such findings will be turned over to the administration of the focus institution in the hope that they can offer a clearer picture of homeschooled students, a significant percentage (30%) of the student body. During a time when the focus institution is seeking to increase enrollment growth over the next 5 years, as stated in the institution's strategic plan, knowing that homeschooled students do as well academically (even more so) when compared to traditionally schooled students provides helpful direction in the institution's recruitment efforts. Homeschooled students are a valuable commodity to be pursued by the focus institution. The results of the study showed that the current academic success of homeschooled students is likely to not change and thus should remain the same for homeschooled students attending the focus institution in the future.

Furthermore, the results of the study reinforce, for parents, that homeschooling is a viable educational alternative for preparing their children for academic success in college, specifically a Catholic college or university. Given that homeschooled students scored significantly higher than traditionally schooled students in standardized achievement tests (the ACT and SAT) and in overall college GPA, perhaps one can go so

far as to say that the homeschooling movement is a better educational alternative when it comes to preparing students for academic success in higher education. The results of the study certainly confirm the literature, which has given ample support to the homeschooling movement. Since the effects of homeschooling can be seen at the highest level in a college or university, there is no reason to doubt that the home is no better a place for learning and preparation for higher education as a traditional school.

Limitations

This evaluative study was limited by the following seven limitations:

1. This study was limited to students attending a private, liberal arts Catholic university located in South Florida. This institution was not randomly selected. Therefore, results were generalized to students attending this university only (and other Catholic colleges and universities like it), and results might not be applicable to the academic achievement of homeschooled and traditionally schooled students attending college as a whole.

2. Given more time to complete, the researcher would like to look at the academic achievement of homeschooled and traditionally schooled students attending a variety of different postsecondary institutions: a community college; a small and large, public, 4-year university; a private, nonreligious, 4-year university; and additional private, religious universities. This would allow for the writer to make broader generalizations with regards to the results of the study. The writer would also like to look at the academic achievement of a single group of homeschooled students through their college career.

3. Because this study correlated variables, no causal relationship could be shown, with absolute certainty, between the independent variable, secondary school type, and the dependent variable, academic achievement. A correlation is used only to show the extent

to which one or more variables vary with another (Creswell, 2008). This correlational study showed only if a significant difference existed between secondary school type and academic achievement. It was not used to show that a certain type of secondary schooling causes a higher or lesser degree of academic achievement.

4. This applied research study used intact groups. As such, the writer had no control over the type of curriculum used at the secondary level of schooling, which might have influenced academic achievement. Moreover, as previously alluded to, the writer's institution does not track homeschooling prior to high school. Therefore, many students who were considered traditionally schooled might have been homeschooled for the majority of their schooling years, or vice versa.

5. As the writer conducted an evaluation of the academic achievement of homeschooled students, a certain element of subjectivity existed, even though the values of merit and worth were drawn upon by speaking to stakeholders and gathering information from the literature. Moreover, because the evaluation conducted was limited to a specific institution, conclusions drawn from this evaluation may not be transferred to a different institution.

6. This evaluative study used only quantitative data to establish the academic value of homeschooled students attending the focus institution. Even though such data are useful in determining merit, the use of qualitative data would have provided for greater triangulation in determining final results. Moreover, the writer looked at only one component of the evaluand, academic achievement. Other components, such as socialization, would have provided for a far more comprehensive look in regards to an overall evaluation of homeschooled students.

7. As previously mentioned, the writer did not consider homeschooling pedagogy

in this study. Such pedagogy includes the use of independent homeschooling as well as homeschooling via a homeschooling school, such as Seton Home School. With independent homeschooling, parents issue grades, which can often lead to grade inflation. In a homeschooling school, grades are verified by professional educators. This difference is critical in establishing which approach to homeschooling is most effective in producing successful students (R. Dittus, personal communication, April 16, 2011).

Recommendations for Future Research

This applied research study added important information to the literature in regards to the academic achievement and value of homeschooled students attending a Catholic university. However, further research still needs to be done to convince those who doubt the homeschooling phenomenon as a legitimate educational alternative. Additional research can be done in the area of socialization. According to Saunders (2006), the academic preparation of homeschooled students is no longer in question, but the socialization question still is. More research studies need to be done to confirm that homeschooled students are not only academically prepared for the academic rigors of college but also able to easily navigate the complex social landscape of college. Determination of success in college for homeschooled students is contingent upon proving that these students are able to achieve both high levels of academic achievement and social integration.

Furthermore, since true experiments are not always practical in the area of homeschooling research, more correlational studies need to be done to help build an even stronger case in favor of homeschooling and academic achievement in college (Clemente, 2006). Additional quantitative and qualitative studies can be done in the area of academic achievement in various types of institutions: public, private, non-Catholic, and Catholic.

A longitudinal study may be beneficial by more intimately following a particular group of homeschooled students throughout their college career. More studies can be done on retention, looking at the complex variables that affect the choice of homeschooled students not only to choose one college over another but also to persist until graduation. Additional case studies may be beneficial in the tracking of a particular family or families in homeschooling approach as students are academically prepared for college.

Further research can also be done into the most effective pedagogy, or approach, to homeschooling. The practice of homeschooling often encompasses either some form of independent homeschooling or homeschooling via a more guided curriculum, such as attending a virtual school or some other home study program. Yet, such approaches can academically yield quite different results. More correlational research needs to be done into which approach to homeschooling is most effective in producing students who are able to achieve high levels of academic success in college.

Finally, the results of this study will be turned over to the focus institution, including university administration, faculty, staff, and all stakeholders, with specific recommendations. The focus institution should continue to seek out homeschooled students as an important part of its student body. More explicit recruitment efforts should be made at targeting this group of students. At the same time, however, both public-schooled students and Catholic-schooled students did well academically in comparison to homeschooled students. For example, when comparing major GPA, core GPA, and secondary school type, all students averaged near a 3.00 GPA or above, and no statistically significant difference was found. Similar results were found when overall GPA and junior and senior classes were compared by school type. These students should not be overlooked in the focus institution's recruitment effort.

References

ACT. (2011). Home page. Retrieved from http://www.act.org/aap/index.html

Allen-Mills, T. (2006, February 26). Pizza pope builds a Catholic heaven. *The Sunday Times.* Retrieved from http://www.timesonline.co.uk/tol/news/world/article735109.ece

American Montessori Society. (2010). Home page. Retrieved from http://www.amshq.org

Aurini, J., & Davies, S. (2005). Choice without markets: Homeschooling in the context of private education. *British Journal of Sociology of Education, 26*, 461-474.

Barwegen, L. M., Falciani, N. K, Putnam, S. J., Reamer, M. B., & Stair, E. E. (2004). Academic achievement of homeschool and public school students and student perception of parent involvement. *The School Community Journal, 14*(1), 39-58.

Belfield, C. R., & Levin, H. M. (2005). *Privatizing educational choice: Consequences for parents, schools, and public policy*. Boulder, CO: Paradigm.

Bolle, M., Wessel, R., & Mulhivill, T. (2007). Transitional experiences of first year college students who were homeschooled. *Journal of College Student Development, 48*, 637-654.

Brewer, C. (2007). *Criticism of homeschooling: How to answer and alleviate those who question you.* Retrieved from http://www.associatedcontent.com/article/210885/criticism_of_homeschooling_how_to_answer_pg3.html?cat=25

Brice, R. G. (2008). A reply to John Searle and other traditionalists. *Multicultural Education, 16*(2), 37-40.

Brown, J. (1997). *Parents' rationale for homeschooling: A qualitative study* (Unpublished master's thesis). Youngstown State University, Youngstown, OH.

Brown v. Board of Education, 347 U.S. 483 (1954).

Carper, J. C. (2000). Pluralism to establishment to dissent: The religious and educational context of home schooling. *Peabody Journal of Education, 75*, 8-19.

Catholic colleges seek support of Catholic school colleagues to spread the good news of Catholic higher education. (2008). *Momentum, 39*(1), 59-60.

Cesareo, F. C. (2007). Can a Catholic college exist today? *New England Journal of Higher Education, 22*(2)*,* 17-18.

Clark, M. (1993). *Catholic homeschooling*. Rockford, IL: Tan Books.

Classical Christian Homeschooling. (n.d.). *On the trivium.* Retrieved from http://www

.classical-homeschooling.org/trivium.html

Clemente, D. (2006). *Academic achievement and college aptitude in homeschooled high school students compared to their private-schooled and public-schooled counterparts* (Doctoral dissertation). Regent University, Virginia Beach, VA.

Cogan, M. F. (2010). Exploring academic outcomes of homeschooled students. *Journal of College Admission, 208*, 18-25.

Cohen, C. (1997). *And what about college? How homeschooling leads to admissions to the best colleges*. Cambridge, MA: Holt.

Congregation for Catholic Education. (1997). *The Catholic school on the threshold of the third millennium*. Retrieved from http://www.vatican.va/roman_curia/ congregations/ccatheduc/documents/rc_con_ccatheduc_doc_27041998 _school2000_en.html

Cooper, B., & Sureau, J. (2007). The politics of homeschooling: New developments, new challenges. *Educational Policy, 21*, 110-131. doi:10.1177/0895904806296856

Cornwell, C. M., Mustard, D. B., & Parys, J. V. (2008). *How does the new SAT predict academic achievement in college?* Retrieved from the University of Georgia Terry College of Business website: http://www.terry.uga.edu/~cornwl/research/ newsat.pdf

Costly, K. C. (2006). *Remember John Holt and "How Children Fail?" A book review.* [Review of the book *How Children Fail*, by John Holt]. Russellville: Arkansas State University.

Creswell, J. W. (2008). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson Education.

Dahlquist, K. L., York-Barr, J., & Hendel, D. D. (2006). The choice to homeschool: Home educator perspectives and school district options. *Journal of School Leadership, 16*, 354-385.

Danneels, G. (2001). The Catholic university. *Current Issues in Catholic Higher Education, 21*(2), 3-16.

Davidson, E. J. (2005). *Evaluating methodology basics: The nuts and bolts of sound evaluation.* Thousands, Oaks, CA: Sage.

Davis, M. (2006, December 20). Unschooling stresses curiosity more than traditional academics. *Education Week, 26*(16), 8.

DeBerard, M. S., Spielmans, G. L., & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshman: A longitudinal study. *College Student Journal, 38*, 66-80.

Denig, S., & Dosen, A. (2009). The mission of the Catholic school in pre-Vatican II era (1810-1962) and post-Vatican II era: Insights and observations for the new millennium. *Catholic Education: A Journal of Inquiry and Practice, 13*, 135-156.

Donnelly, R. A. (2007). *The complete idiot's guide to statistics*. New York, NY: Penguin Group.

Educational Testing Service. (2010). *Tests and products.* Retrieved from http://www.ets .org/tests_products

Erickson, D. A. (2005). Homeschooling and the common school nightmare. In B. S. Cooper (Ed.), *Homeschooling in full view: A reader* (pp. 21-44). Greenwich, CT: Information Age.

Evans, A. (2001). Homeschool education: Its impact on a state university. *The SACRAO Journal, 14*, 20-24. Retrieved from http://www.sacrao.org/journals/pdf/14Evans .pdf

Family Unschoolers Network. (2006). Home page. Retrieved from http://www .unschooling.org

Fideler, D. (1996). *The seven liberal arts*. Retrieved from http://cosmopolis.com/villa/ liberal-arts.html

Fields-Smith, C., & Williams, M. (2009). Motivations, sacrifices, and challenges: Black parents' decisions to home school. *Urban Review, 41,* 369-389. doi:10.1007/s/ 11256-008-0114-x

Florida Department of Education. (2009). *Home education in Florida: Annual report 2008-2009.* Tallahassee, FL: Office of Independent Education and Parent Choice.

Gaither, M. (2008). Why homeschooling happened. *Educational Horizons, 84*, 226-237.

Gaither, M. (2009). Home schooling goes mainstream. *Education Next, 9*(1), 10-18.

Galloway. R. (1995, April). *Home schooled adults: Are they ready for college?* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Galvan, J. L (2006). *Writing literature reviews: A guide for students of the social and behavioral science* (3rd ed.). Glendale, CA: Pyrczak.

Gangopadhyay, P. (2002). *Making evaluation meaningful to all education stakeholders*. Retrieved from the University of Western Michigan website: http://www.wmich .edu/evalctr/archive_checklists/makingevalmeaningful.pdf

Garrett, M. (2006). The identity of American Catholic higher education: A historical overview. *Catholic Education: A Journal of Inquiry and Practice, 10*, 229-247.

Glanzer, P. (2008). Rethinking the boundaries and burdens of parental authority over education: A response of Rob Reich's case study of homeschooling. *Educational Theory, 28*(1), 1-16.

Grade-point average. (2010). In *Merriam-Webster's online dictionary.* Retrieved from http://www.merriam-webster.com/dictionary/grade+point+average

Graunke, S. S., & Woosley, S. A. (2005). An exploration of the factors that affect the academic success of college sophomores. *College Student Journal, 39*(2). Retrieved from http://findarticles.com/p/articles/mi_m0FCR/is_2_39/ai_n14703161/pg_2/?tag=content;col1

Gray, D. (1998). *A study of the academic achievements of homeschooled students who have matriculated into post-secondary institutions* (Doctoral dissertation). University of Sarasota, Sarasota, FL.

Green, C., & Dempsey, K. (2007). Why do parents homeschool? A systematic examination of parental involvement. *Education and Urban Society, 39*, 264-285. doi:10.1177/0013124506294862

Hahn, K., & Hasson, M. (1996). *Catholic education: Homeward bound*. San Francisco, CA: Ignatius Press.

Hahn, P., & Cruickshank, C. (2006). Marketing colleges to homeschoolers. *Journal of Marketing for Higher Education, 16*(2), 25-43.

Higgins, C. (2008). *Pilot study: Homeschooling parents' motivations and pedagogy.* Unpublished manuscript, Humboldt State University, Arcata, CA.

Holder, M. (2001). *Academic achievement and socialization of college students who were homeschooled* (Doctoral dissertation). University of Memphis, Memphis, TN.

Holt, J. (1964). *How children fail.* New York, NY: Pitman.

Holt, J. (1967). *How children learn.* New York, NY: Pitman.

Holt, J. (1976). *Instead of education.* New York, NY: E. P. Dutton.

Holt, J. (1981). *Teach your own.* Cambridge, MA: Perseus.

Homeschool Learning Network. (2007). *Homeschool approaches.* Retrieved from http://www.homeschoollearning.com/approaches

Home School Legal Defense Association. (2001). *Home schooling achievement.* Retrieved from http://www.hslda.org/docs/study/comp2001/HomeSchoolAchievement.pdf

Home School Legal Defense Association. (2009a). *Homeschooling in the United States: A legal analysis for Florida.* Retrieved from http://www.hslda.org/laws/analysis/

Florida.pdf

Home School Legal Defense Association. (2009b). *Homeschooling in the United States: A legal analysis for Michigan.* Retrieved from http://www.hslda.org/laws/analysis/Michigan.pdf

Horn, B. (2006). *GPA as a measure of UNT student learning in the teacher candidate program.* Retrieved from http://cfbstaff.cfbisd.edu/hornb/GPA%20paper.pdf

Hsu, S. D. H., & Schombert, J. (2010). *The value of hard work: College GPA predictions from SAT scores.* Retrieved from http://duende.uoregon.edu/~hsu/blogfiles/sat.pdf

Hunt, T. C. (2005). Catholic schools: Yesterday, today, and tomorrow. *Journal of Research on Christian Education, 14*, 161-175.

Isenberg, E. J. (2007). What have we learned about homeschooling? *Peabody Journal of Education, 82*, 387-409.

Janosik, C. (2000). Catholic higher education: By our ties must we be known? *Current Issues in Catholic Higher Education, 20*(2), 41-55.

Jenkins, T. (1998). *The performance of home schooled students in community colleges* (Doctoral dissertation). Texas A&M University, Commerce.

Jones, P., & Gloeckner, G. (2004a). First-year college performance: A study of home school graduates and traditional school graduates. *The Journal of College Admission*, *183,* 17-20.

Jones, P., & Gloeckner, G. (2004b). Perceptions of and attitudes toward homeschool students. *The Journal of College Admission*, *185,* 12-21.

Kennan, M. (2009). *How to choose an appropriate sample size.* Retrieved from http://www.ehow.com/how_5328613_choose-appropriate-sample-size.html

Kim, E., Newton, F. B., Downey, R. G., & Benton, S. L. (2010). Personal factors impacting college student success: Constructing college learning effectiveness inventory. *College Student Journal, 44*, 112-125.

Klicka, C. J. (2007). *Homeschooled students excel in college*. Purcellville, VA: Home School Legal Defense Association.

Knowles, J. G., Marlow, S.E., & Muchmore, J.A. (1992). From pedagogy to ideology: Origins and phases of home education in the United States, 1970-1990. *American Journal of Education, 100*, 195-235.

Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). *Validity of the SAT for predicting first-year grade-point average* (College Board Research Report No. 2008-5). Retrieved from http://professionals.collegeboard.com/profdownload/Validity_of_the_SAT_for_Predicting_First_Year_College

_Grade_Point_Average.pdf

Kranzow, J. (2004). *Taking a different path: The college experiences of homeschooled students* (Doctoral dissertation). Indiana University, Bloomington.

Lamadrid, L. (2009). The higher value of Catholic college education. *Momentum, 40*(1), 66-70.

Lattibeaudiere, V. H. (2000). *An exploratory study of the transition and adjustment of former homeschooled students to college life* (Doctoral dissertation). University of Tennessee, Knoxville.

Lavoie, L. (2006). *Examining the perceived academic and social development of six early entrant home-schooled students in a Connecticut community college: A practical action research study* (Doctoral dissertation). University of Hartford, Hartford, CT.

Lawrence, F. M. (2007). *Homeschooling: Status and bibliography.* New York, NY: Nova Science.

Lines, P. M. (2000). Homeschooling comes of age. *Public Interest, 140*, 74-85.

Lips, D., & Feinberg, E. (2008). *Homeschooling: A growing option in American education.* Retrieved from the Heritage Foundation website: http://www.heritage .org/Research/Education/bg2122.cfm

Lips, D., & Feinberg, E. (2009, September). Homeschooling: The sleeping giant of American education. *USA Today, 138*(2772), 22.

Lubienski, C. (2000). Whither the common good? A critique of home schooling. *Peabody Journal of Education*, *75*, 207-232.

Luke, C. (2003). Home schooling: Learning from dissent. *Canadian Journal of Educational Administration and Policy, 25*. Retrieved from http://www .umanitoba.ca/publications/cjeap/articles/caluke.html

Lyman, I. (1998a). *Homeschooling: Back to the future?* (Cato Policy Analysis No. 294). Retrieved from the Cato Institute website: http://www.cato.org/pubs/pas/pa-294 .html

Lyman, I. (1998b, September). What's behind the growth in homeschooling? *USA Today, 127*(2640), 64-66.

Marrin, P. (1997). Catholic homeschooling: Parents teach their kids for a variety of reasons. *National Catholic Reporter, 33*(37), 3-4.

Martin, R. A. (2002, April). *Alternatives in education: An exploration of learner-centered, progressive, and holistic education.* Paper presented at the meeting of the American Educational Research Association, New Orleans, LA.

Mason, G. (2004). Homeschool recruiting: Lessons learned on the journey. *Journal of College Admission*, *185,* 2-3.

McConnell, D. L., & Hurst, C. E. (2006). No "Rip Van Winkles" here: Amish education since *Wisconsin v. Yoder*. *Anthropology and Education Quarterly, 37*, 236-254.

McDonald, D. (1999, February). *Partners for justice: Catholic schools and school choice*. Symposium conducted at the National Catholic Educational Association, Washington, DC.

McIntyre-Bhatty, K. (2007). Interventions and interrogations: An analysis of recent policy imperatives and their rationales in the case of home education. *Education, Knowledge, & Economy, 1*, 241-259.

McKeon, C. (2007). *A mixed methods nested analysis of homeschooling styles, instructional practices, and reading methodologies* (Doctoral dissertation). Capella University, Minneapolis, MN.

McMullen, J. G. (2002). Behind closed doors: Should states regulate homeschooling? *South Carolina Law Review, 54,* 75-110.

Medlin, R. G. (2000). Homeschooling and the question of socialization. *Peabody Journal of Education, 75*, 107-123.

Meyer v. Nebraska, 262 U.S. 390 (1923). Retrieved from http://www.oyez.org/cases/ 1901-1939/1922/1922_325

Mizia, R. L. (2000). Prejudice and educational choice: 75th anniversary of *Pierce v. Society of Sisters*. *Momentum, 31*(2), 17-24.

Monk, D. (2003). Home education: A human right? *Evaluation and Research in Education, 17*, 157-166.

Montessori, M. (1985). *The secret of childhood*. London, England: Sangam Press.

Montessori method of bringing up and educating children. (n.d.) Retrieved from the International Montessori Index website: http://www.montessori.edu/method.html

Moore, R. (n.d.). *Another bulletin from the Moore Foundation: A synopsis.* Retrieved from http://www.moorefoundation.com/article.php?id=50

Moore Homeschooling. (2007). *Moore Academy.* Retrieved from http://www .moorefoundation.com/article.php?id=22

National Catholic Educational Association. (2003). Parental choice in education: A statement by the NCEA. *Momentum, 34*(1), 6.

National Catholic Educational Association 2009 Annual Report. (2010). *Momentum, 41*(2), 77-80.

National Center for Education Statistics. (2003). *Homeschooling in the United States: 2003*. Washington, DC: U.S. Department of Education.

National Center for Education Statistics. (2009). *1.5 million homeschooled students in the United States in 2007* (NCES 2009-030). Washington, DC: U.S. Department of Education.

National Center for Home Education. (2000a). *Homeschoolers in Ivy League universities*. Purcellville, VA: Homeschool Legal Defense Association.

National Center for Home Education. (2000b). *1999 college survey: College admission policies opening to homeschoolers.* Purcellville, VA: Homeschool Legal Defense Association.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Retrieved from the U.S. Department of Education website: http://www2.ed.gov/pubs/NatAtRisk/risk.html

Nelson, M. B., Pawlas, G. E., & Mintz, J. (1998, October). Beyond the stereotypes: Homeschooling as a legitimate educational alternative. *High School Magazine, 6*(2), 32-27.

Nemer, K. (2002). *Understudied education: Toward building a homeschooling research agenda* (Occasional Paper No. 48). New York, NY: Columbia University, Teachers College.

Notre Dame Task Force on Catholic Education. (2008). Making God known, loved, and served: The future of Catholic primary and secondary schools in the United States. *Catholic Education: A Journal of Inquiry and Practice, 11*, 276-312.

O'Shaughnessy, L. (2010). *Can homeschoolers do well in college?* Retrieved from the CBS Money Watch website: http://moneywatch.bnet.com/saving-money/blog/college-solution/can-homeschoolers-do-well-in-college/2551

Pannapaker, W. (2005, December 16). For professors' children, the case for homeschooling. *The Chronicle of Higher Education,* p. B14.

Parental choice in education: A statement by the National Catholic Educational Association. (2003). *Momentum, 34*(1), 6.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research.* San Francisco, CA: John Wiley & Sons.

Peters, D. L. (2009). That's not Montessori. *Montessori Life, 21*(3), 24-25.

Pierce v. the Society of Sisters, 268 U.S. 510 (1925). Retrieved from http://www.oyez.org/cases/1901-1939/1924/1924_583

Pope Benedict XVI. (2008). *Meeting with Catholic educators*. Retrieved from http://

www.vatican.va/holy_father/benedict_xvi/speeches/2008/april/documents/hf_ben-xvi_spe_20080417_cath-univ-washington_en.html

Pope Paul VI. (1965a). *Declaration on Christian education*. Retrieved from http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_decl_19651028_gravissimum-educationis_en.html

Pope Paul VI. (1965b). *Declaration on religious liberty.* Retrieved from http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_decl_19651207_dignitatis-humanae_en.html

Prather, J. (2000). Part-time public school attendance and the freedom of religion: Yoder's impact upon Swanson. *Journal of Law and Education, 29*, 553-559.

Ray, B. (1999). *Homeschooling on the threshold: A survey of research at the dawn of the new millennium.* Salem, OR: National Home Education Research Institute.

Ray, B. (2000). Homeschooling: The ameliorator of negative influences on learning? *Peabody Journal of Education, 75*, 71-106.

Ray, B. (2002). Customization through homeschooling. *Educational Leadership, 59*(7), 50-54.

Ray, B. (2004a). *Home educated and now adults: Their community and civic involvement, views about homeschooling, and other traits.* Salem, OR: National Home Education Research Institute.

Ray, B. (2004b). Homeschoolers on to college: What research shows us. *Journal of College Admission, 185,* 5-11.

Ray, B. (2009a). *Homeschool progress report 2009: Academic achievement and demographics*. Purcellville, VA: Homeschool Legal Defense Association.

Ray, B. (2009b). *Research facts on homeschooling.* Salem, OR: National Home Education Research Institute.

Ray, B., & Eagleson, B. (2008). State regulation of homeschooling and homeschoolers' SAT scores. *Academic Leadership: The Online Journal, 6*(3). Retrieved from http://www.academicleadership.org/emprical_research/State_Regulation_of_Homeschooling_and_Homeschoolers_SAT_Scores.shtml

Reich, R. (2008). On regulating homeschooling: A reply to Glanzer. *Educational Theory, 58*, 17-23.

Reindl, T. (2005). Homeschooling in the United States: Growth . . . and growing pains. *College and University, 80*(3), 35-36.

Richert, S. (2008). *Pope Benedict meets with representatives of Catholic universities.* Retrieved from the About.com website: http://catholicism.about.com/od/

popebenedicts2008visit/tp/Catholic_School.htm

Romanowski, M. H. (2006). Revisiting the common myths about homeschooling. *The Clearing House, 79*, 125-129.

Rudner, L. (1999). *The scholastic achievement of home school students.* College Park, MD: ERIC Clearinghouse on Assessment and Evaluation.

Russo, C. J., & Gregory, D. L. (2007). *Ex Corde Ecclesiae* and American Catholic higher education: The calm before the storm or dead in the water? *Journal of Personal Evaluation in Education, 19,* 147-158. doi:10.1007/s11092-007-9037-4

Sacred Congregation for Catholic Education. (1977). *The Catholic school.* Retrieved from http://www.vatican.va/roman_curia/congregations/ccatheduc/documents/rc_con_ccatheduc_doc_19770319_catholic-school_en.html

Saunders, M. (2006). *Comparing the first year experiences and persistence rates of previously homeschooled college freshmen to college freshmen who were not homeschooled* (Doctoral dissertation). Vanderbilt University, Nashville, TN.

Sayers, D. (1947). The lost tools of learning. *Hibbert Journal: A Quarterly Review of Religion, Theology, and Philosophy, 46*, 1-13.

Schnake, R. K. (2000). Lutheran schools and the Supreme Court: The 75th anniversary of *Pierce v. Society of Sisters*. *Lutheran Education, 134*, 199-209.

Scriven, M. (1991). *Evaluation thesaurus* (4th ed.). Newbury Park, CA: Sage.

Scriven, M. (2003). *The Key Evaluation Checklist*. Retrieved from the Western Michigan University website: http://www.wmich.edu/evalctr/checklists/evaluation-models

Seton Home Study School. (2010). Home page. Retrieved from http://www.setonhome.org

Shaw, I. (n.d.). *Pros and cons of homeschooling.* Retrieved from http://school.familyeducation.com/home-schooling/parenting/29861.html

Shea, C. (1996, February 2). From home to college. *The Chronicle of Higher Education,* pp. A31-A32.

Simply Charlotte Mason. (2010). *What is the Charlotte Mason method?* Retrieved from http://simplycharlottemason.com/basics/what-is-the-charlotte-mason-method

Sorey, K., & Duggan, M. (2008). Homeschoolers entering community colleges: Perceptions of admission officers. *Journal of College Admission, 200*, 22-28.

Soundy, C. S. (2009). Young children's imaginative play: Is it valued in the Montessori classroom? *Early Childhood Education Journal, 36*, 381-383.

Stevens, E. (1994). *What is unschooling?* Retrieved from the Natural Child Project website: http://www.naturalchild.org/guest/earl_stevens.html

Stufflebeam, D. L. (2001). *Evaluation values and criteria checklist*. Retrieved from the Western Michigan University website: http://www.wmich.edu/evalctr/wp-content/uploads/2010/05/values_criteria.pdf

Sutton, J. (2002, January). Homeschooling comes of age. *Brown Alumni Magazine.* Retrieved from http://www.homeeducator.com/FamilyTimes/articles/10-5Article4.html

Sutton, J., & Galloway, R. (2000). College success of students from three high school settings. *Journal of Research and Development in Education, 33*, 137-146.

Sutton, J., McKinney, J. D., & Hallahan, D. P. (1992). Effects of grade level and educational setting on behaviors of beginning learning disabilities teachers. *Learning Disabilities Research and Practice, 7*, 16-24.

Tarricone, C. (1997, August 1). States consider how colleges treat homeschooled students. *The Chronicle of Higher Education,* p. A30.

Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-125.

Traditional homeschooling method. (n.d.). Retrieved from http://homeschoolnetworklibrary.com/traditional.htm

U.S. Department of Education. (2011). *General: Family Educational Rights and Privacy Act (FERPA).* Retrieved from http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html

Universal Declaration of Human Rights (1948). Retrieved from the United Nations website: http://www.un.org/en/documents/udhr

Wasley, P. (2007, October 12). Home-schooled students rise in supply and demand. *The Chronicle of Higher Education*, p. A1.

Weinberg, S. (2009). Secret of tabula rasa. *Montessori Life, 21*(2), 31-35.

Wichers, M. (2001). Homeschooling: Adventitious or detrimental for proficiency in higher education. *Education, 122*, 145-150.

Wilhelm, G. M., & Firmin, M. W. (2009). Historical and contemporary developments in home school education. *Journal of Research on Christian Education, 18*, 303-315.

Wisconsin v. Yoder, 406 U.S. 205 (1972). Retrieved from http://www.oyez.org/cases/1970-1979/1971/1971_70_110

Wise-Bauer, S. & Wise, J. (2004). *The well trained mind: A guide to classical education at home.* New York, NY: Norton.

Appendix A

Demographic Information

Demographic Information

Demographic	Frequency	Percentage
Secondary school type		
Public schooled	137	33.6
Catholic schooled	142	34.8
Homeschooled	129	31.6
Gender		
Male	189	46.3
Female	219	53.7
Ethnicity		
White	263	64.5
Black	10	2.5
Hispanic	61	14.9
Asian	16	3.9
American Indian	2	0.5
Unknown	56	13.7
Religion		
Catholic	321	78.7
Christian	16	3.9
Unknown	71	17.4
Class level		
Freshmen	133	32.6
Sophomores	110	27.0
Juniors	92	22.5
Seniors	73	17.9

Note. $N = 408$.

Appendix B

ACT Composite Scores: Frequency Table

ACT Composite Scores: Frequency Table

			Secondary school type		
ACT score	Frequency	Percentage	Public	Catholic	Home
15	1	0.5	0	1	0
16	2	0.9	0	1	1
17	2	0.9	1	1	0
18	7	3.2	6	1	0
19	10	4.6	3	3	4
20	8	3.7	5	3	0
21	22	10.0	13	5	4
22	30	13.7	12	9	9
23	16	7.3	7	5	4
24	19	8.7	10	6	3
25	8	3.7	5	0	3
26	12	5.5	6	2	4
27	16	7.3	8	6	2
28	14	6.3	9	2	3
29	14	6.3	6	1	7
30	14	6.3	5	5	4
31	12	5.5	1	5	6
32	8	3.7	2	2	4
33	1	0.5	0	0	1
34	2	0.9	1	1	0
35	1	0.5	0	0	1
Total	219	100.0	100	59	60

Appendix C

SAT Total Scores: Frequency Table

SAT Total Scores: Frequency Table

			Secondary school type		
SAT score	Frequency	Percentage	Public	Catholic	Home
1200-1250	1	0.4	0	1	0
1251-1300	5	1.9	1	2	2
1301-1350	3	1.0	0	2	1
1351-1400	10	3.8	5	4	1
1401-1450	6	2.3	3	2	1
1451-1500	15	5.7	5	5	5
1501-1550	13	4.9	7	6	0
1551-1600	17	6.4	5	9	3
1601-1650	20	7.5	8	9	3
1651-1700	19	7.2	6	8	5
1701-1750	14	5.3	3	5	6
1751-1800	14	5.3	4	6	4
1801-1850	20	7.5	9	6	5
1851-1900	27	10.2	8	7	12
1901-1950	14	5.3	2	7	5
1951-2000	18	6.8	2	9	7
2001-2050	8	3.0	0	3	5
2051-2100	13	4.9	2	6	5
2101-2150	6	2.3	1	2	3
2151-2200	9	3.4	1	4	4
2201-2250	7	2.6	1	2	4
2251-2300	4	1.5	1	1	2
2301-2350	1	0.4	0	0	1
2351-2400	1	0.4	0	0	1
Total	265	100.0	74	106	85

Appendix D

Overall GPA: Frequency Table

Overall GPA: Frequency Table

			Secondary school type		
Overall GPA	Frequency	Percentage	Public	Catholic	Home
0.00-0.25	2	0.5	2	0	0
0.26-0.50	2	0.5	1	1	0
0.51-0.75	2	0.5	1	1	0
0.76-1.00	2	0.5	2	0	0
1.01-1.25	2	0.5	2	0	0
1.26-1.50	14	3.4	5	6	3
1.51-1.75	8	2.0	4	3	1
1.76-2.00	22	5.4	12	4	6
2.01-2.25	26	6.4	12	9	5
2.26-2.50	39	9.6	18	12	9
2.51-2.75	48	11.7	15	20	13
2.76-3.00	49	12.0	15	23	11
3.01-3.25	31	7.6	8	10	13
3.26-3.50	52	12.7	11	22	19
3.51-3.75	58	14.2	18	18	22
3.76-4.00	51	12.5	11	13	27
Total	408	100.0	137	142	129

Note. GPA = grade-point average.

Appendix E

Major GPA: Frequency Table

Major GPA: Frequency Table

			Secondary school type		
Major GPA	Frequency	Percentage	Public	Catholic	Home
0.00-0.25	1	0.6	1	0	0
0.26-0.50	0	0.0	0	0	0
0.51-0.75	0	0.0	0	0	0
0.76-1.00	0	0.0	0	0	0
1.01-1.25	0	0.0	0	0	0
1.26-1.50	2	1.3	0	0	2
1.51-1.75	2	1.3	0	1	1
1.76-2.00	3	1.8	2	0	1
2.01-2.25	4	2.4	1	1	2
2.26-2.50	15	9.1	4	7	4
2.51-2.75	20	12.2	8	6	6
2.76-3.00	14	8.5	0	6	8
3.01-3.25	22	13.4	7	8	7
3.26-3.50	25	15.2	4	9	12
3.51-3.75	28	17.1	7	11	10
3.76-4.00	28	17.1	8	5	15
Total	164	100.0	42	54	68

Note. GPA = grade-point average.

Appendix F

Core GPA: Frequency Table

Core GPA: Frequency Table

			Secondary school type		
Core GPA	Frequency	Percentage	Public	Catholic	Home
0.00-0.25	0	0.0	0	0	0
0.26-0.50	0	0.0	0	0	0
0.51-0.75	0	0.0	0	0	0
0.76-1.00	0	0.0	0	0	0
1.01-1.25	1	0.6	0	0	1
1.26-1.50	1	0.6	0	0	1
1.51-1.75	0	0.0	0	0	0
1.76-2.00	7	4.2	3	3	1
2.01-2.25	16	9.7	7	3	6
2.26-2.50	8	4.9	0	4	4
2.51-2.75	21	12.7	6	8	7
2.76-3.00	18	10.9	5	7	6
3.01-3.25	20	12.1	4	6	10
3.26-3.50	28	17.0	4	13	11
3.51-3.75	24	14.6	9	7	8
3.76-4.00	21	12.7	4	3	14
Total	165	100.0	42	54	69

Note. GPA = grade-point average.