

POST-SECONDARY DECISIONS OF PUBLIC SCHOOL AND  
HOMESCHOOL GRADUATES IN JACKSON  
COUNTY, WISCONSIN, AS COMPARED  
TO NATIONAL POST-SECONDARY  
DECISION STATISTICS

by

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ABSTRACT

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<u>Post-Secondary Decisions of Pubic School and Homeschool Graduates in Jackson</u> (Title)			
<u>County, Wisconsin as compared to National Post-Secondary Decision Statistics</u>			
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This study reviewed the history of the homeschooling movement, how the movement has grown, who participates in homeschooling and why, curriculum development, concerns with homeschooling, how homeschoolers compare to conventionally schooled students on national tests, and the transitioning of both homeschooled and conventionally schooled students from their high school years to their post-secondary choices. A total of 41 graduates from public schools serving Jackson County and 17 graduates of homeschooling programs from Jackson County participated in telephone surveys, which gathered data regarding the graduates' families of origin and post-secondary decisions.

Results of this study showed significantly more (85.4%) public school graduates in Jackson County pursued post-secondary education than did homeschool graduates from Jackson County (52.9%). Nationally, according to Ray (1999), 71% of

conventionally schooled graduates pursue post-secondary education, while 69% of homeschool graduates on the national level pursued post-secondary education. Hence, Jackson County public school graduates pursue post-secondary education more often than the national average would suggest, and Jackson County homeschool graduates pursue post-secondary education less often.

The study also found that Jackson County homeschool graduates did significantly better on the ACT college entrance exam, with a mean score of 26, compared to the public school graduates' mean score of 22. Both groups, when compared to national ACT statistics, scored better than the national statistics would suggest (Golden). Nationally, homeschool students had a mean score of 22.7 between 1996 and 1999, and public school students had a mean score of 21.0 during the same time frame.

In terms of family life, there were no statistically significant differences found between the number of children in the families of homeschool graduates (3.4) compared to families of public school graduates (3.09). Schumm's (1994) national findings indicate that the families of the Jackson County homeschool graduates have less (3.4) children than do homeschooling families on the national level (4.1). The families of the public school graduates, however, had more children (3.09) than the national data would suggest (2.3).

When studying the marital status of the parents of the graduates at the time of high school graduation, it was found that 100% of the parents of the Jackson County homeschool graduates were still married, while 80.5% of the parents of the Jackson County public school graduates were still married. This difference was not found to be statistically significant.

Regarding the educational level of parents, mothers of the homeschool graduates had the most education of all the parents in this study, with 64.7% having post-secondary education or training. Ray's (1997) national statistics indicate that more (73%) mothers of homeschoolers on the national level have post-secondary education or training. Fathers of the Jackson County homeschool graduates, however, were the least educated group of parents in the study, with only 35.5% having some type of post-secondary training or education. Nationally, according to Ray, 76% of fathers of homeschoolers have post-secondary education or training.

When studying the occupations of the mothers, it was found that more (58.8%) mothers of the homeschool graduates were categorized as homemakers than were mothers of public school graduates (12%). It was found, however, that mothers were the primary instructors for their homeschool students in Jackson County, providing instruction 44.54% of the time.

The family backgrounds of the public school and homeschool graduates from Jackson County were not found to be statistically different. The two statistically significant differences found, however, included the ACT scores earned and the post-secondary decisions made by the graduates. The homeschool graduates scored significantly higher on the ACT than did the public school graduates in Jackson County, although, significantly more public school graduates from Jackson County pursued post-secondary education or training.

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## CHAPTER I

### Introduction

One generation ago, the issue of where a child's formal schooling would take place was not significant for most families, with the majority of children attending public or private schools. Today most children continue to attend conventional educational institutions, however, a third option is quickly gaining popularity. Homeschooling, although serving as the chosen educational path for a very small number of today's schoolchildren, is quickly growing as a feasible option to teach today's school-age population.

While many Americans continue to be skeptical of this new trend in education, more and more families are finding this to be an appropriate educational choice for their children. Traditionally viewed as a trend among conservative Christian families who wanted their children to receive education with a biblical core, Everhart and Harper (1997) report that many more parents are choosing the homeschooling option due to their perceptions of local public schools as more dangerous than in years past and as institutions which are providing a less-than-adequate education for students.

Homeschooling is the course of education selected by families of more than 1.2 million American schoolchildren, according to Pflieger (1998). Of that figure, just over 18.5 thousand of those children resided in Wisconsin in 1998 (Luebke, 1999). Luebke (1999) adds that with their numbers summed, Wisconsin's homeschooled students would comparatively create the sixth largest school district in the state. In response to the large and ever-increasing number of homeschooled students, James Miller, president of the Wisconsin Policy Research Institute, states "homeschooling is a clear demonstration of

unhappiness with the current public school system among a number of parents in Wisconsin” (Luebke, 1999, p. i).

Families who choose this course of education feel that they are able to achieve educational goals which are not attainable within the walls of a public or private classroom setting and can also tailor education to meet the individual needs of their children. One student was quoted as saying, “you can learn at your own pace and focus on the areas you have trouble with” (“It is cool,” 1996). Homeschooled students have the benefit of spending as little or as much time as they need on a particular task that they are learning, as there are not other students setting the pace of the lessons. Other benefits of homeschooling include the freedom to design one’s own curriculum, including the option to do in-depth studying of particular topics of interest.

Those opposing homeschooling argue that students educated at home have little interaction with peers, which may be a detriment to them when working with and relating to others. Other arguments against homeschooling include the fact that these students have completed an education that may have required minimal test-taking, contained few projects requiring teamwork, and had no classroom experience which inadequately prepares homeschoolers for the challenges of post-secondary education and employment opportunities (Lamb, 1990; Pflieger, 1998). Opponents also argue that by homeschooling their children, many parents can effectively shelter their children from activities and situations which occur outside the walls of one’s home, and without any exposure to these situations, the homeschooled child will not understand how to deal with or react to situations he or she will encounter once out in the world (Wahisi, 1995).

As the recipients of this new trend in education conclude their secondary education, their next set of decisions will determine the success of their homeschooling experience and how it has prepared them for their lives as adults. Because the students who have recently completed their homeschool education are the first of their kind, there is limited research exploring how their education has prepared them for life.

Additionally, it is difficult to gather information about homeschoolers, as each homeschool setting is independent from the next and has many extraneous variables that make the settings hard to gather information from. As more families opt to homeschool their children, however, it is important to learn if the concept of educating children at home is an appropriate way to prepare them for further education and employment opportunities.

There is currently no published data regarding homeschoolers from Wisconsin and their post-secondary choices. Luebke (1999) suggests that researchers further explore this topic. The Department of Public Instruction (DPI), however, does track the post-secondary plans that Wisconsin's public high school seniors are making. In 1998, the DPI noted that 68% of graduating seniors planned to further their education (20.7% through vocational education and 47.3% at a university), 13.9% sought employment, 2.4% planned to enter the military, and 15.6% were undecided.

On a national level, Ray (1999) has found that following graduation, 71% of public school graduates pursue post-secondary education (at a 4-year university, 2-year college, or technical college) and 29% opt to join the workforce. Although unavailable on a state level in Wisconsin, there is national-level data regarding the post-secondary choices of homeschoolers. Ray (1999) has found that upon completion of their

schooling, 69% of homeschooled students pursue post-secondary education (at a 4-year university, 2-year college, or technical college) and 31% choose to enter the workforce. Nationally, according to Ray (1999), there is only a slight difference between the post-secondary choices of homeschooled versus conventionally schooled students.

Therefore, the research hypothesis for this study is that homeschooled students from Jackson County and graduates from public school districts serving Jackson County select similar post-secondary options, as do their nation-wide counterparts. By studying the post-secondary choices made by both homeschooled and conventionally schooled students in Jackson County, this study may aid local parents in deciding whether or not homeschooling is the right choice for their families.

#### Statement of the Problem

The purpose of this study is to determine the level of difference between the frequency of post-secondary choices expected for public school and homeschool graduates in Jackson County and to compare this data with the already observed frequency of post-high school choices made by conventionally schooled and homeschooled students on a national level, as measured by a telephone survey.

#### Null Hypotheses

The Null Hypotheses for this study are as follows:

There is no statistically significant difference between the frequency of ACT scores expected for students who graduated from homeschool programs in Jackson County and those students who graduated from public schools serving Jackson County.

There is no statistically significant difference between the frequency of post-secondary choices expected for students who graduated from homeschool programs in

Jackson County and those students who graduated from public schools serving Jackson County.

There is no statistically significant difference between the frequency of levels of education expected for mothers of the homeschool graduates and mothers of the public school graduates.

There is no statistically significant difference between the frequency of levels of education expected for fathers of the homeschool graduates and the fathers of the public school graduates.

There is no statistically significant difference between the frequency of marital status expected for parents of the homeschool graduates and the parents of the public school graduates at the time of graduation.

There is no statistically significant difference between the frequency of number of children per family expected for families of homeschool graduates and families of public school graduates.

### Assumptions

It has been assumed that the participants in this study answered the survey questionnaire truthfully and accurately.

### Limitations

With the exception of Black River Falls graduates, the public school graduates were not selected from an official school list of graduates, as the school districts, other than Black River Falls, were not willing to release these lists due to confidentiality restrictions. Therefore, the names of public school graduates other than those from Black

River Falls, were selected from lists of graduates published in the local newspaper annually prior to graduation.

The homeschool graduates were referred by a mother in Jackson County who had homeschooled her own children, and had extensive knowledge of other homeschooling families in the Jackson County area who had been associated with the Jackson County Homeschoolers Association. The group of homeschoolers was not a representative group of Jackson County homeschool graduates, as the majority of homeschoolers came from families who participated in the educational co-op group. There is no list of Jackson County homeschoolers, which hindered the researcher in the development of a representative homeschooling group.

#### Definition of Terms

According to Everhart and Harper (1997), homeschooling is “defined as any short or long-term situation in which students are schooled in various subject matter content at home by parents, relatives, friends, or perceived experts” (p. 51). Conventional schooling, as defined for this study, is a typical public or private classroom from which the student has the opportunity to receive all of his or her formal education for grades kindergarten through twelve. Graduates, as defined for use in this study, refers to any student, conventionally schooled or homeschooled, who complete required coursework and has been recognized as completing secondary education.



## CHAPTER II

### Review of Literature

#### Introduction

In order to provide insight into how homeschool settings operate, this chapter provides descriptive information about the history of the movement, how the movement has grown, who is participating in homeschooling and why, curriculum development, concerns with homeschooling, how homeschoolers compare to conventionally schooled students on national tests, and the transitioning of both homeschooled and conventionally schooled students from their high school years to their post-secondary choices.

#### History

The legalization of homeschooling in all states in the United States followed the pivotal case of *Wisconsin vs. Yoder* in 1972, according to Lamb (1990). Although legal since that time, homeschooling has never been an extremely popular option, although the acceptance of this practice is growing. Pflieger (1988) notes that between 1985 and 1997, Americans who said they approved of homeschooling increased from 16% to 36%. Homeschooling remains a relatively new trend within society, and although the approval of homeschooling is on the rise, Everhart and Harper (1997) point out that a recent Gallup poll concluded that while people do generally support parents' rights to homeschool their children, the majority do not feel homeschooling is an appropriate choice for their own children.

#### Growth of Homeschooling

Like its acceptance rate, the numbers of homeschooled children is also on the rise. Between 1990 and 1995, Pflieger (1998) reports that this number more than doubled,

surpassing 1.2 million children. Texas currently has the most homeschooled students, with 90,000 children being homeschooled, according to Shea (1996). On a national level, homeschoolers, according to Schumm (1994), account for 0.5% to 1% of all schoolchildren. Schumm (1998), who studied the trends of homeschooling in the Midwest from 1992 to 1997, noted an increase in elementary homeschoolers by 32% and an increase in homeschoolers in higher grades by 180%.

### Profile of Families who Homeschool

As the number of homeschooled children increases, the types of families who choose this route of education continue to share a common profile. Through his research, Schumm (1994) noted that families who opted to homeschool had an average of 4.1 children, versus the 2.3 children in families who sent their children to conventional school settings. Of all the homeschooling families he profiled, 100% were intact nuclear families, although some remarriages had occurred. Typically, the father worked outside the home and the mother held the majority of the teaching responsibilities. Strong Christian beliefs were expressed by 95.6% of the families profiled. Finally, a 1990 survey reports “70% of Maine homeschooling families had an annual pre-tax income of less than \$35,000” (Lyman, 1993, p. 62). While a profile of the families who homeschool has begun to emerge, another common thread permeates their similarities. The majority of these families have expressed dissatisfaction with the education their local school districts offer or the way in which it is provided.

### Why Families Homeschool

Missionary John Hold and humanist Dr. Raymond Moore, pioneering thinkers in the homeschool movement, summarize their thoughts on conventional schooling as an

attempt, which has “Failed greatly in terms of educating and nurturing children” (Lyman, 1993, p. 62). Of the families who homeschool their children, this proves to be a common thought. Parents list the following reasons for choosing to homeschool their children: overcrowded classrooms, cookie-cutter curricula, indifferent teachers, lack of trust in the public school systems to educate their children (Lyman, 1993) as well as lack of discipline, and preference for Christian-based and/or culturally-centered curriculum (Wahisi, 1995).

Barry and Susie Brooks of Austin, Texas decided to homeschool their children. When asked the reason for their decision, they replied, “we were concerned about what we saw as an increasingly secular value system that was coming out of the public schools. We felt uncomfortable putting our kids in schools where values were anti-ethical to ours” (Wahisi, 1995, p. 14). The Brooks also added that they are concerned with the declining academic standards and the breakdown of discipline in many schools today.

Bergen, McGraw, and Schumm (1993) noted in their research that, like the Brooks, 65% of families who homeschool do so in order to instill religious values and beliefs in their children. They found that 22% of families homeschool primarily as a means to attain academic excellence. Academic excellency is why David and Micki Colfax of California decided to homeschool their four sons. They stated that their primary reason for homeschooling was to “facilitate the development of intellect and character—and not merely to prepare them for colleges or career” (Lamb, 1990, p. 34).

Fear of violence in school is quickly becoming an additional reason why families are choosing to homeschool. According to Golden (2000), following the 1999

Columbine High School shooting in Littleton, Colorado, homeschooling in that state increased by 10%.

### Curriculum Development

Families who express displeasure with the way public schools are structured tend to find satisfaction in the various means through which they can educate their children at home. According to Everhart and Harper (1997), there are a variety of ways to approach homeschooling, depending on the needs and learning styles of the students. Common techniques to educate one's child at home may include employing one or more of the following models: parent-led, student-led, following a set curriculum, and/or parents selecting content as educational needs begin to appear more appropriate. Many times, parents will also allow their children to assume the responsibility for choosing and carrying out projects as the children mature. If a curriculum is desired, the family can purchase a packaged curriculum, which provides curriculum guidelines, lesson plans, work, and textbooks, and sometimes a teacher to whom assignments can be mailed for evaluation (Lamb, 1990). Video correspondence coursework is another structured approach some families prefer to employ. Within the homeschool setting, Wahisi (1995) reports that teaching is typically done by the mother, although Bergen, McGraw, and Schumm (1993) add that their studies found fathers to be responsible for at least one subject area, typically science, religion, or physical education.

One benefit of homeschooling that families find extremely attractive is the fact that they can tailor their children's education to the needs of each individual child. Lessons can be paced according to the academic needs of the individual student and can be incorporated into a hobby or favorite pastime. The Colfax children from California

worked hard to master their basic foundational skills, then, according to Abramson and Seligmann (1988), spent a minimal number of hours per day in a formal schoolroom setting and spent a great deal of time completing projects on their family's ranch which allowed them to apply and expand their knowledge base. Lamb (1990) adds "for the Colfaxes, there were no tests, set curriculums or deadlines, but rather lots of books, field trips, educational toys, and real work on the family ranch. That work included projects like installing phone lines, building a guest house, and raising livestock which taught the boys intensive lessons in such areas as math, engineering, and animal sciences" (p. 32).

Homeschooling can be designed to meet the needs of the family, which may include several homeschooling families working together. Everhart and Harper (1997) report that homeschooling families commonly come together to form homeschooling co-ops in order to teach specific courses such as music, physical education, art and other areas for which greater expertise from one parent in the group may be available. Not limiting themselves to co-ops, some families find that they are able to best meet the educational needs of their children by mixing homeschooling with other types of education, such as public or private school. Schumm (1998) reports that one fourth of homeschooling families draw from a variety of educational settings to provide instruction to their children. According to the Wisconsin Department of Public Instruction (2000), Wisconsin state law permits high-school age homeschoolers to attend up to two classes per semester in their local public high school, if the school board determines classroom space is available.

### Concerns with Homeschooling

One area that has been highly criticized by skeptics of homeschooling is the apparent lack of social skill development by children involved in this model of education. To put this myth to rest, Lamb (1990) noted the research conducted that comparatively explored the social development between homeschoolers and non-homeschoolers. She reported that based on recent studies, “no big difference between the two groups of children in self-confidence or assertiveness” (p. 62) has been found. It has also been concluded that homeschooled children, in fact, have consistently fewer behavior problems. Everhart and Harper (1997) support these conclusions by noting that published research, although limited, has indicated that homeschoolers tested above average on social and psychological development scales. It is important to note that the majority of homeschooled children do interact with other children outside their family on a regular basis. Lamb (1990) reports that two-thirds of parents of homeschoolers arrange time on a regular basis for their children to interact with peers.

Amanda Bergson-Shilcock is a college student who received her primary and secondary education at home. When reflecting on her social development during her homeschool years, she said that she had “already been out in the real world, dealing with real people of different ages and different personalities” (Remmerde, 1997, p. 12). Her sister, Emily, also homeschooled, noted, “it’s good to be around people of different ages, because that’s the way the world works once you get out [of school]” (Remmerde, 1997, p. 12).

On the contrary, many homeschooling families are concerned with the types of social interactions their children will be exposed to in a public or private school setting.

Homeschool advocate John Hold ponders socialization from this perspective: when reflecting on the many schools he has visited, taught in, or simply had knowledge of, he described them as generally “mean-spirited, competitive, exclusive, status-seeking, and snobbish” (Lamb, 1990, p. 34). Families who share Holt’s concerns feel that homeschooling may help to avoid those negative social experiences by instead promoting a strong family bond (Lyman, 1993).

### National Test Scores

Although families who homeschool are able to create an educational structure appropriate for what they seek to provide their children, one may wonder how homeschoolers compare to their conventionally schooled counterparts in the academic realm. Research comparing homeschooled and conventionally schooled pupils is only recently available. Results from one study found homeschoolers scoring between the 80<sup>th</sup> and 87<sup>th</sup> percentile on national tests, whereas average public school students in Virginia scored around the 50<sup>th</sup> percentile (Pfleger, 1998). While glaring differences are depicted between the homeschooled children and those who attend conventional schools, the reader must know that these scores compare nation-wide homeschoolers with public schoolers only in the state of Virginia. The homeschooled children also were required to send in a survey through which they shared the data for this study, and by doing so, created a non-representative sample of the homeschool population. A second study reports parallel achievement of public and homeschooled students (Pfleger, 1998). Researchers attempting to provide this data state that it is difficult to gain a totally accurate picture of the success of homeschooling due to the many variables within homeschool environments. Some of these variables, according to Bergen, McGraw, and

Schumm (1993), are: family socioeconomic status, mother's attitudes towards employment outside the home, the number and age distribution of children, the types of curriculum used, the number of subjects taught concurrently, reasons for homeschooling, years of experience homeschooling, the level of support from others in the social network, extra-curricular activities, and household organization.

Following the completion of the twelfth grade, many students who attend conventional schools proceed to gain further education through colleges and universities. This is certainly an option for homeschooled children as well. Although many homeschooled students may not complete high school with a transcript and diploma in hand, they are fully recognized by the majority of our nation's higher educational institutions as equal candidates for admission. One typical admission requirement of potential college students is a set of scores from either the ACT or SAT. According to Golden (2000), between 1996 and 1999, homeschooled students have out-scored conventionally schooled students' overall mean score of 21.0. To help the reader understand this data, the mean scores for both groups in each category measured by the ACT can be seen in Table 1.

Table 1

National Mean ACT Scores from 1996 to 1999 of Homeschooled and Conventionally Schooled Students

<i>Students</i>	<i>English</i>	<i>Reading</i>	<i>Science</i>	<i>Math</i>	<i>Total</i>
Homeschool	23.1	24.4	21.9	20.4	22.7
Conventional	20.5	21.4	21.0	20.7	21.0



According to the Wisconsin Department of Public Instruction (1999), 67% of Wisconsin seniors took the ACT in 1999. Those students demonstrated an overall mean score of 22.3, which is below the previously noted mean homeschool score. The breakdown of Wisconsin's conventionally schooled students' mean scores in individual categories, however, were much closer (and scoring higher in science and math) to the national homeschool scores than were individual categorical scores for conventionally schooled students on a national level. The scores for Wisconsin seniors were as follows: English: 21.5, reading: 22.4, science: 22.4, and math: 22.2. The SAT, according to Golden (2000) has documented similar results on a national level as the ACT, with homeschooled students scoring higher than conventionally schooled students. In 1999, homeschooled students who took the SAT earned a mean score of 1083 and conventionally schooled students earned a mean score of 1010.

#### Transitioning to Post-Secondary Options

Wisconsin Department of Public Instruction (1999) states that of the 1999 public high school graduates, 68% were planning to further their education (20.7% through vocational education and 47.3% at a university), 13.9% were planning to seek employment, 2.4% had plans to enter the military, and 15.6% were undecided.

Like many U.S. colleges and universities, both Harvard and Stanford welcome both homeschool and conventional school graduates to their campuses. Jonathan Reider from the Stanford Admissions Department notes that Stanford admits homeschoolers and adds, "we think they are often very bright and independent thinkers" (Remmerde, 1997, p. 12). Harvard admissions advisor, David Illingsworth, supports Reider's thoughts by

stating that homeschoolers tend to perform just as well as other Harvard students.

Remmerde (1997) also reports that Illingsworth gives his vote of confidence to homeschoolers that they will “not only pass, but do very well” (p.12). Emily Bergson-Shilcock does not attend Stanford or Harvard, but rather Beaver College in Glenside, PA. Remmerde (1997) reports that as Emily reflected on her homeschooling preparation and then her entrance into college life, she stated, “I really felt like I fit in very well, both socially and academically” (p. 12).

As more students complete their education at home, other programs, in addition to college and university systems, are having to change their admission methods to appropriately accommodate this new wave of young adults. Until recently, homeschooled students entering the military were considered second-tier recruits, grouped together with those who had dropped out of high school and later received General Education Development (GED) degrees (Homeschooling, 1998). In comparison, first-tier recruits are those who have graduated from high school with a diploma and third-tier recruits are those who have dropped out of high school and have not earned a GED. Legislation passed in 1999, however, making homeschooled students, who had registered with their local school districts as homeschoolers, first-tier recruits—equally ranked with those who had graduated from conventional school programs, according to R. Blake, recruiter for the Air Force (personal communication, July 24, 2000).

Air National Guard Recruiter Master Sergeant Louis H. Birkholz, based in Tomah, WI, has recruited seven homeschooled students for service following the completion of their home education (personal communication, July 18, 2000). In order for them to be considered parallel recruits with public high school graduates, Birkholz

must, as does the Air Force, have documentation that the family had registered the student with the local public school district as a homeschooled student. Reflecting upon his experience with homeschooled students, he recalls that they have done quite well in the Air National Guard, and he has had no problems with them. He notes that all recruits must take the ASVAP test as part of their recruitment, and that homeschooled students tend to do as well as or better than their conventionally schooled peers.

### Summary

While homeschooling can be a very positive experience for families who are not completely satisfied with the education their local public schools have to offer, there are a variety of thoughts to keep in mind when exploring this option. Wahisi (1995) reports that parents must have the skills needed to successfully carry out the task of homeschooling. They need to be sure that their children are kept on track and learning appropriate subject matter. Bergen, McGraw, and Schumm (1993) add that time management and the maintenance of household organization are also keys to homeschooling success. They suggest that a support group for homeschooling families may be worth checking into for the sake of encouragement and also to use as a resource to help with stress related to homeschooling.

Homeschooling may not be the appropriate educational option for all families, but when not satisfied with the public or private schooling options available in a family's community, homeschooling can be a feasible alternative. Homeschooling presents a means for parents to creatively and individually tailor education to the needs and interests of their children, pacing progress on the academic needs of their children. This creative

and challenging undertaking, which can also promote desired family values, is certainly a potential means for educating our youngest generation.

## CHAPTER III

### Methodology

#### Subjects

The first group of subjects in this study included 41 graduates from public high schools serving Jackson County (WI) who completed their secondary education between 1995 and 2000. This group of 41 graduates represents 38 different families. The high schools they graduated from serve the Black River Falls, Melrose/Mindoro, Alma Center/Humbird/Merrillan, and Blair/Taylor school districts. The second group of subjects in this study was made up of 17 graduates from Jackson County and who were homeschooled, completing their education in a homeschool setting between the years 1995 and 2000. The 17 homeschool graduates represent ten different families.

The public school graduates were randomly selected from the annual graduation supplement to the Banner Journal newspaper, which serves Jackson County, and from the Black River Falls High School commencement programs. The homeschool graduates were located through contacts made to parents who were active in the Black River Falls Homeschool Association who then provided the researcher with referrals to other families as well as the researcher independently contacting families who homeschooled their children, although were not affiliated with the homeschool association.

#### Instrumentation

In an effort to compare the post-secondary choices made by both homeschooled students and those students who have attended public schools in Jackson County to the observed experiences of nation-wide students, a causal comparative study was conducted. After developing a list of randomly selected public school graduates and a list of all know

homeschool graduates, the researcher learned from community members whom the parents of the graduates were, and contacted them by phone, asking permission to send their graduates a letter explaining the study and verifying the graduates' addresses and phone numbers. Each participant was contacted first by letter to inform them of this study and to tell them they would receive a phone call within two weeks to collect data. They were then contacted by phone to gather information regarding their post-secondary choices and their family profiles. The phone calls lasted approximately three minutes, which allowed time enough to verify their age, gender, school district of residence during their years of education, whether they were public schooled or homeschooled, what their choices were following completion of their secondary education, as well as information regarding their family profiles. Homeschool graduates were also asked questions regarding their homeschool education.

### Data Analysis

The chi-square inferential statistic was used to determine the differences between the homeschool and public school graduates' post-secondary choices, ACT scores, parents' levels of education, number of siblings in the families, and the marital status of the graduates' parents at the time of graduation. According to Crowl (1993), chi-square is frequently used by researchers when "examining the relationship among two or more nominal variables" when trying to determine whether or not the relationship is statistically significant (p. 154). Frequency counts and percentages were also used to analyze data regarding the years the subjects graduated from high school, occupations of the parents, years for which homeschool graduates were homeschooled, the primary instructor in the homeschool setting, participation in cooperative education opportunities,

and coursework taken by homeschoolers in the public schools. Chapter IV will provide the results from the study and discussion of the findings.

## Chapter IV

### Results and Discussion

#### Results

Chapter IV contains a profile of Jackson County graduates from 1995 through 2000 who were either educated in public school districts serving residents of Jackson County or in a homeschool environment. Included in this profile is information regarding when the participants graduated, their choices after graduation, and information regarding their family make-up, including educational levels and occupations of the parents, marital status of the parents, and number of children in the family. Also included is information regarding issues pertinent to homeschooling, such as primary instructors and participation in cooperative education opportunities. Following the data regarding the post-secondary choices and family profiles of these graduates will be a discussion regarding the findings, where comparisons and contrasts will be made.

#### Number of Graduates Participating in the Study

Fifty-eight graduates from Jackson County educational programs participated in this study. Forty-one of those were graduates of public schools and 17 were graduates from homeschool programs. All graduates were residents of Jackson County at the time of their graduation. The number of public school graduates from each school district represents the percentage of actual graduates from their high school that resided in Jackson County and graduated between 1995-2000. See Tables 2 and 3.



Table 2

Number of Public School Graduates

<i>School District of Residence</i>	<i>Frequency</i>	<i>Percent</i>
Alma Center-Humbird-Merrillan	7	17.0
Black River Falls	21	51.2
Blair-Taylor	4	9.8
Melrose-Mindoro	9	22.0
<b>Total</b>	41	100.0

Table 3

Number of Homeschool Graduates

<i>School District of Residence</i>	<i>Frequency</i>	<i>Percent</i>
Alma Center-Humbird-Merrillan	2	11.8
Black River Falls	13	76.4
Blair-Taylor	2	11.8
Melrose-Mindoro	0	0.0
<b>Total</b>	17	100.0

Years the Participants Graduated

All participants in this study graduated between 1995 and 2000. Public school students were randomly selected based on gender and school district attended. The

number of participants per graduation year does not proportionally represent the size of their graduating classes. See Tables 4 and 5.

Table 4

Public School Graduates' Years of Graduation

<i>Year of Graduation</i>	<i>Frequency</i>	<i>Percent</i>
1995	5	12.0
1996	4	9.0
1997	9	22.0
1998	9	22.0
1999	10	24.0
2000	4	9.0
<b>Total</b>	41	100.0

Table 5

Homeschooled Graduates' Years of Graduation

<i>Year of Graduation</i>	<i>Frequency</i>	<i>Percent</i>
1995	4	23.5
1996	0	0.0
1997	2	11.8
1998	5	29.4
1999	4	23.5
2000	2	11.8
<b>Total</b>	17	100.0

Gender of the Graduates

The public school and homeschool groups both contained male and female participants. There were 22 male public school graduates (53.7%) and 19 female public school graduates (46.3%) who participated in the study. The public school graduates proportionally represent, by gender, the number of males and females graduating from their high school between 1995 and 2000 that resided in Jackson County at the time of graduation. All known homeschool graduates who completed school between 1995 and 2000 participated in this study, so their numbers do not represent a larger group. See Tables 6 and 7

Table 6

Gender of Public School Graduates

<i>Gender by School District</i>	<i>Frequency</i>	<i>Percent</i>
Alma Center/Humbird/Merrillan		
Boys	3	7.317
Girls	4	9.756
Black River Falls		
Boys	11	26.829
Girls	10	24.390
Blair/Taylor		
Boys	3	7.311
Girls	1	2.439
Melrose/Mindoro		
Boys	5	12.195
Girls	4	9.756
<b>Total</b>	41	100.0

Table 7

Gender of Homeschool Graduates

<i>Gender</i>	<i>Frequency</i>	<i>Percent</i>
Boys	13	76.5
Girls	4	23.5
<b>Total</b>	17	100.0

Participants in College Entrance Exams

Both the homeschool and public school graduate groups had members who took either the ACT or SAT, which are standardized college entrance exams. Seventy-eight percent of public school graduates and 58.8% of homeschool graduates participated in college entrance exams. See Tables 8 and 9.

Table 8

Participation of Public School Graduates in College Entrance Examinations

<i>Graduates who participated in College Entrance Exams</i>	<i>Frequency</i>	<i>Percentage</i>
Participated	32	78.0
Did not Participate	9	22.0
<b>Total</b>	41	100.0

Table 9

Participation of Homeschool Graduates in College Entrance Examinations

<i>Graduates who participated in College Entrance Exams</i>	<i>Frequency</i>	<i>Percentage</i>
Participated	10	58.8
Did not Participate	7	41.2
<b>Total</b>	17	100.0

Scores on College Entrance Exams

Seventy-eight percent of public school graduates participated in college entrance exams. All of these students took the ACT college entrance exam, which has a high score of 36. Four of the graduates who took the ACT could not recall their scores. Recorded scores for the public school participants ranged from 17 to 28. The mean score was 22. Of the homeschool graduates, 58.8% took college entrance exams. Eight took the ACT and two took the SAT. One student who took the ACT could not recall his score, and both students who took the SAT could not recall their scores. Of the noted ACT scores for the homeschool graduates, the range was from 19 to 30, and the mean score was 26. The ACT scores of both sets of graduates were also analyzed by using the T-Test. The T value is 2.484 with a  $df=34$ . The relationship between the two sets of scores and educational institutions was significant at the .05 level. See Appendix C, Table C<sub>1</sub>.

The T value, representing the relationship between the ACT scores of homeschool and public school graduates, was found to be significant, therefore, the null hypotheses

stating that there was no statistically significant difference between the frequency of ACT scores expected for the two groups of students, must be rejected.

### Post-Secondary Choices

Tables 10 and 11 show the decisions made by both public school and homeschool graduates the first year after their graduation from high school. Sixty-one percent of public school graduates attended four-year colleges or universities following high school, 14.6% attended technical school, 14.6% also worked, 4.9% attended two-year colleges, and 4.9% of the graduates enlisted in the military. Homeschool graduates made slightly different choices, with 47.1% selecting to enter the workforce following graduation, 35.3% attending four-year colleges and universities, and 17.6% attending technical school.

Table 10

### Post-Secondary Choices of Public School Graduates

<i>Post-Secondary Decision</i>	<i>Frequency</i>	<i>Percent</i>
Work	6	14.6
Technical School	6	14.6
Two-Year College	2	4.9
Four-Year College or University	25	61.0
Military	2	4.9
<b>Total</b>	41	100.0

Table 11

Post-Secondary Choices of Homeschool Graduates

<i>Post-Secondary Decision</i>	<i>Frequency</i>	<i>Percent</i>
Work	8	47.1
Technical School	3	17.6
Four-Year College or University	6	35.3
<b>Total</b>	17	100.0

The differences in the graduates' post-secondary choices were also analyzed by Pearson's Chi-Square analysis. For this statistical analysis, the post-secondary choices were divided into two categories: further education or work. The calculated chi-square value was 7.308, corresponding to  $df=1$ , and is therefore significant at the .01 level. See Appendix D, Tables D<sub>1</sub> and D<sub>2</sub>.

Because this chi-square value, representing the differences between what homeschool and public school graduates chose to do after high school, was found to be significant, the null hypothesis which states that there was no statistically significant difference between the frequency of post-secondary choices expected for the two groups of students, must be rejected.

Level of Education of the Graduates' Mothers

The level of education of the mothers of both public school graduates and homeschool graduates is presented in Tables 12 and 13. High school was the highest level of education completed by mothers of public school graduates (18). Fourteen



mothers hold either a bachelors or master's degree. Like the mothers of public school graduates, high school was also the highest level of education completed by the majority of mothers of homeschool graduates (5). Four mothers completed technical school and four mothers attended some college. Three mothers of homeschool graduates earned a bachelor's degree.

Table 12

Level of Education of Mothers of Public School Graduates

<i>Level of Education</i>	<i>Frequency</i>	<i>Percent</i>
High School	18	43.9
Technical School	6	14.6
Some College	2	4.9
Bachelors Degree	9	22.0
Master's Degree	5	12.2
Don't Know	1	2.4
<b>Total</b>	41	100.0

Table 13

Level of Education of Mothers of Homeschool Graduates

<i>Level of Education</i>	<i>Frequency</i>	<i>Percent</i>
Middle School	1	5.9
High School	5	29.4
Technical School	4	23.5
Some College	4	23.5
Bachelors Degree	3	17.7
<b>Total</b>	17	100.0

The level of education of the mothers of both groups was also analyzed using Pearson's Chi-Square analysis. The levels of education of the mothers was divided into two categories: equal or less than a high school diploma and post-high school education. The calculated chi-square value was 0.862, corresponding to  $df=1$ , and therefore was not statistically significant. See Appendix D, Tables D<sub>3</sub> and D<sub>4</sub>.

Because this chi-square value, representing the differences between the educational levels of the mothers of the homeschool graduates and mothers of the public school graduates, was not statistically significant, the null hypothesis, which states there is no statistically significant difference between the frequency of levels of education expected for mothers of homeschool graduates and mothers of public school graduates, must be accepted.

Level of Education of the Graduates' Fathers

The education of fathers of public school graduates varied greatly, ranging from completion of a middle school education to graduation from medical school. The majority of the fathers of public school graduates pursued some type of post-secondary education following their graduation from high school (58.5%). For nine of the fathers of homeschool graduates, their high school diplomas represent their highest level of education, while six of the fathers pursued post-secondary education. See Tables 14 and 15.

Table 14

Level of Education of Fathers of Public School Graduates

<i>Level of Education</i>	<i>Frequency</i>	<i>Percent</i>
Middle School	2	4.9
11 <sup>th</sup> Grade	1	2.4
G.E.D.	1	2.4
High School	14	34.2
Technical School	12	29.3
Some College	3	7.3
Bachelors Degree	3	7.3
Masters Degree	4	9.8
Medical Degree	1	2.4
<b>Total</b>	<b>41</b>	<b>100.0</b>

Table 15

Level of Education of Fathers of Homeschool Graduates

<i>Level of Education</i>	<i>Frequency</i>	<i>Percent</i>
Middle School	2	11.8
High School	9	52.9
Technical School	4	23.5
Bachelors Degree	2	11.8
<b>Total</b>	17	100.0

The educational levels of the fathers of the graduates were also analyzed by Chi-Square. The educational levels of the fathers were divided into two categories: equal to or less than a high school diploma and post-high school education. The calculated chi-square value was .395, corresponding to  $df=1$ , and therefore was not statistically significant. See Appendix D, Tables D<sub>5</sub> and D<sub>6</sub>.

The chi-square value representing the difference between the educational levels of the homeschool fathers and public school fathers was not found to be statistically significant, therefore, the null hypothesis, which states that there is no statistically significant difference between the frequency of levels of education expected for fathers of the homeschool graduates and the fathers of public school graduates, must be accepted.

Occupations of the Mothers

Tables 16 and 17 describe the occupations of the mothers, which were categorized by type of work done. The categories were created by Ray (1997). The occupations of the mothers of public school graduates were spread widely, with the largest group of

mothers being employed as school teachers (19.51%). Five (12.20%) mothers of public school graduates were homemakers, as compared to 10 (58.82%) mothers of homeschool graduates who were homemakers. The occupations of mothers of homeschool graduates were limited.

Table 16

Occupations of Mothers of Public School Graduates

<i>Occupation</i>	<i>Frequency</i>	<i>Percent</i>
Farmer	2	4.88
Homemaker	5	12.20
Laborer	2	4.88
Manager	2	4.88
Office Worker	5	12.20
Professional	4	9.76
Small Business Owner	2	4.88
School Teacher	8	19.51
Service Worker	6	14.63
Technical	2	4.88
Other	3	7.32
<b>Total</b>	41	100.0

Table 17

Occupations of Mothers of Homeschool Graduates

<i>Occupations</i>	<i>Frequency</i>	<i>Percent</i>
Farmer	2	11.76
Homemaker	10	58.82
Office Worker	2	11.77
Professional	2	11.77
Other	1	5.88
<b>Total</b>	17	100.0

Occupations of the Fathers

The occupations of the fathers were categorized by type of work performed. The categories utilized were created by Ray (1997). Fathers of public school graduates were employed in a variety of occupations, with majority of the fathers employed as farmers (19.51%) with the next largest category described as “managerial” in type (12.20%). The greatest percentage of fathers of homeschool graduates held occupations categorized as a trade (35.29%) with the second largest category as farming with 17.64% of the fathers employed in this business. These occupations can be seen in more detail in Tables 18 and 19.

Table 18

Occupations of Fathers of Public School Graduates

<i>Occupations</i>	<i>Frequency</i>	<i>Percent</i>
Farmer	8	19.51
Laborer	2	4.88
Machine Operator	4	9.76
Manager	5	12.20
Professional	3	7.32
Protective Services	4	9.76
Service Worker	4	9.76
Small Business Owner	2	4.88
Teacher	4	9.76
Technical	1	2.44
Tradesperson	1	2.44
Other	3	7.32
<b>Total</b>	41	100.0



Table 19

Occupations of Fathers of Homeschool Graduates

<i>Occupations</i>	<i>Frequency</i>	<i>Percent</i>
Farmer	3	17.64
Machine Operator	1	5.88
Manager	1	5.88
Sales	2	11.76
Small Business Owner	2	11.76
Tradesperson	6	35.29
Technical	2	11.76
<b>Total</b>	17	100.0

Marital Status of Parents at Time of the Participant's Graduation

Both public school and homeschool graduates were asked what the marital status of their parents was at the time of their own graduation. The parents of public school students tended to still be married (80.5%) at the time the graduates participating in this study graduated. The parents of homeschool graduates were all still married (100%) at the time the graduates participating in this study graduated. See Tables 20 and 21.

Table 20

Marital Status of Parents of Public School Graduates at the Time of Graduation

<i>Marital Status</i>	<i>Frequency (Sets of Parents)</i>	<i>Percent</i>
Married	33	80.5
Divorced	7	17.1
Widowed	1	2.4
<b>Total</b>	41	100.0

Table 21

Marital Status of Parents of Homeschool Graduates at Time of Graduation

<i>Marital Status</i>	<i>Frequency</i>	<i>Percent</i>
Married	17	100.0
Divorced	0	0.0
<b>Total</b>	17	100.0

The marital status of the parents of both groups of graduates was also analyzed by Chi-Square. The groups of parents were divided into two groups: married and single-parent homes. The calculated Chi-Square value was 2.382, corresponding to  $df=1$ , and therefore the relationship between marital status and educational institution was not found to be statistically significant. See Appendix D, Tables D<sub>7</sub> and D<sub>8</sub>.

Because this chi-square value, representing the difference between the marital status of the parents of homeschool graduates and public school graduates at the time of graduation, was found to not be statistically significant, the null hypothesis, which states that there is no statistically significant difference between the frequency of marital status expected for parents of the homeschool graduates and parents of the public school graduates at the time of graduation, must be accepted.

#### Number of Children per Family

The number of children in families of graduates from public schools ranged from two to six children per family. The mean was 3.09 children per family of the public school graduates. For families of homeschool graduates, the range of children per family was two to five children per family. The mean was 3.4 children per family of homeschool graduates.

The number of children per family was also analyzed by using a T-test. The T-test value was .889 with  $df=56$ , therefore, there is no statistically significant relationship between the number of children per family and educational institutions. See Appendix C, Table C<sub>2</sub>.

Because the T-test value, representing the relationship between the number of children in the families of homeschool graduates and the number of children in the families of public school graduates, was found to not be statistically significant, the null hypothesis, which states that there is no statistically significant difference between the frequency of number of children per family expected for families of homeschool graduates and families of public school graduate, must be accepted.

### Grades for Which Homeschool Graduates were Homeschooled

All of the homeschool graduates participating in this study were placed in the “homeschool graduate” category because they completed their schooling in a homeschool format. Not all of the participants, however, were homeschooled for their entire school career. Table 22 describes the grades for which the homeschool graduates were homeschooled.

Table 22

Grades for which Homeschool Graduates were Homeschooled

<i>Grades Homeschooled</i>	<i>Frequency</i>	<i>Percent</i>
Kindergarten –12 <sup>th</sup> Grade	7	41.18
3 <sup>rd</sup> Grade-12 <sup>th</sup> Grade	2	11.76
4 <sup>th</sup> Grade-12 <sup>th</sup> Grade	1	5.88
5 <sup>th</sup> Grade-12 <sup>th</sup> Grade	4	23.53
8 <sup>th</sup> Grade-12 <sup>th</sup> Grade	1	5.88
9 <sup>th</sup> Grade-12 <sup>th</sup> Grade	1	5.88
K-8 <sup>th</sup> and 10 <sup>th</sup> -12 <sup>th</sup> Grade	1	5.88
<b>Total</b>	17	100.0

Primary Instructor in the Homeschool Setting

Tables 23-29 describe who the primary instructor was for each subject taught in the homeschool environment. Mothers were the primary instructors for science, English, history/civics, and religion. Math was taught equally by both mothers and fathers. Physical education was taught primarily through a group setting, either with the family or through activities with the Jackson Co. homeschool group. Foreign language was taught primarily equally by mothers and through instructional videotapes. Each of the 17 homeschool graduates provided data regarding their primary instructors for seven subject areas, which provided 119 opportunities for instruction for the entire group. Table 30

shows an overview of who provided instruction for these graduates. Overall, mothers were the primary instructors for their children.

Table 23

Primary Instructor: Math

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	6	35.3
Father	6	35.3
Mother and Father	3	17.6
Private Teacher	1	5.9
Videotapes	1	5.9
<b>Total</b>	17	100.0

Table 24

Primary Instructor: Science

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	10	58.8
Father	2	11.8
Mother and Father	4	23.5
Videotapes	1	5.9
<b>Total</b>	17	100.0

Table 25

Primary Instructor: English

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	13	76.471
Father	0	0.000
Mother and Father	2	11.765
Videotapes	1	5.882
Self-Taught	1	5.882
<b>Total</b>	17	100.0

Table 26

Primary Instructor: History/Civics

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	11	64.71
Father	1	5.88
Mother and Father	2	11.76
Videotapes	1	5.88
Self-Taught	2	11.76
<b>Total</b>	17	100.0

Table 27

Primary Instructor: Religion

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	7	41.2
Father	1	5.9
Mother and Father	5	29.4
Videotapes	1	5.9
Church	3	17.6
<b>Total</b>	17	100.0

Table 28

Primary Instructor: Physical Education

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	3	17.7
Father	0	0.0
Family Activities	5	29.4
Homeschool Group Activities	5	29.4
No Physical Education Training	4	23.5
<b>Total</b>	17	100.0



Table 29

Primary Instructor: Foreign Language

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	3	17.6
Father	0	0.0
Correspondence Course	1	5.9
Private Teacher	1	5.9
Videotapes	3	17.6
Distance Learning Course	1	5.9
Book/Tape Packages	1	5.9
Self-Taught	1	5.9
No Foreign Language Training	6	35.3
<b>Total</b>	17	100.0

Table 30

Primary Instructor: Overall

<i>Instructor</i>	<i>Frequency</i>	<i>Percent</i>
Mother	53	44.54
Father	10	8.40
Mother and Father	16	13.45
Book/Tape Sets	1	0.84
Church	3	2.52
Correspondence Course	1	0.84
Distance Learning	1	0.84
Family Activities	5	4.20
Homeschool Group	5	4.20
Private Teacher	2	1.68
Self-Taught	4	3.36
Videotapes	8	6.72
No Formal Instruction	10	8.40
<b>Total</b>	119	100.0

Participation by Homeschoolers in Cooperative Education Opportunities

Table 31 shows the level of participation of homeschoolers in cooperative education opportunities. A cooperative education opportunity was recognized as any opportunity with other peers to come together and learn about any number of topics or to gain a

variety of new experiences. The majority (82.4%) of the homeschoolers participated in cooperative education opportunities. Those opportunities and the number of homeschoolers who participated in each opportunity were: 4-H (10), 4-H musicals (2), 4-H softball (2), show choir (1), Falls Players Community Theatre (1), LaCrosse Playhouse Community Theatre (1), karate (1), church activities (5), Jackson Co. homeschool group (11), Boy Scouts (1), and art lessons (2).

Table 31

The Participation of Homeschool Graduates in Cooperative Education Opportunities

<i>Homeschool Graduates who participated in Cooperative Education Opportunities</i>	<i>Frequency</i>	<i>Percent</i>
Participated	14	82.4
Did not Participate	3	17.6
<b>Total</b>	17	100.0

Courses Taken by Homeschoolers at Public High Schools

Legally, in the state of Wisconsin, students enrolled in homeschool programs are allowed to take up to two credits of coursework per semester at their local public high schools, providing there is adequate room for them in the classroom. Although some of the homeschool graduates in the Black River Falls School District would have liked to exercise their right to participate in this educational experience, they reported being turned away by their local school district, even after trying to explain this piece of legislation to their local school boards. Those homeschool graduates who were residents

of the Black River Falls Public School District reported receiving letters from the school district, following their registration for homeschool education, explaining to them all that they would not be allowed to participate in due to the fact that the student was registered as a homeschooled student. Two students did participate in public high school coursework in districts other than Black River Falls. One student took classes on stained glass and dance, and the second student took driver's education. See Table 32.

Table 32

Courses Taken by Homeschoolers at Public High Schools

<i>Participation in Public High School Courses</i>	<i>Frequency</i>	<i>Percentage</i>
Participated	2	11.8
Did not Participate	15	88.2
<b>Total</b>	17	100.0

Reasons Families Selected Homeschooling

A variety of reasons were provided for why the families who homeschooled their children opted to educate their children in this manner, as opposed to sending them to public schools. Each family typically had more than one reason for homeschooling, which are listed below:

- Family traveled on the road for father's job—through homeschooling, they could stay together.
- One to one student-teacher ratio.

- Did not care for what was being taught in the public school (meditation, sex education, and evolution).
- Student was having trouble in public school.
- Choice of student.
- Homeschooling provided better direction than did public school.
- Better education through homeschooling.
- Good match for family.
- Didn't care for the public school system.
- Homeschooling provided an opportunity to be well grounded in the Bible.
- Parents wanted to be responsible for their children's education.
- Parents wanted the children to have a different experience.
- No private schools locally and the family wasn't comfortable with public school.
- Family felt that there was too much time wasted in the public schools.
- Initially, the children needed a bit longer to mature, and homeschooling went so well that the family continued.
- Homeschooling provided an opportunity to teach family values along with school curriculum.

### Discussion of the Findings

In some areas, the findings of this study reflect the regional and national findings of researchers studying homeschooling. In other cases, however, this study shows how homeschoolers in Jackson County present differently than the national data would suggest. When compared to their public school counterparts, the homeschool graduates of Jackson County chose post-secondary education and training less often (52.9%) than

the public school graduates (85.4%). When analyzed by Chi-square statistical analysis, the level of difference between the two groups of graduates and their decision to work or pursue post-secondary education or training, was found to be statistically significant at the .01 level.

The specific post-secondary choices of the two groups of graduates were as follows. Of the Jackson County homeschoolers, 47.1% decided to enter the workforce after completing their secondary education, as opposed to 14.6% of the public school graduates. This differs from Ray's (1999) national-level findings that the post-secondary options selected by homeschoolers differed only slightly from their conventionally schooled counterparts. Ray (1999) noted that 69% of homeschool graduates opted to pursue post-secondary education or training and 31% decided to enter the workforce, as compared to 71% of the public school graduates who pursued post-secondary education and training and 29% who chose to enter the workforce after graduation from high school.

Many of those students, both public schooled and homeschooled, are required to take entrance exams if they want to pursue post-secondary education in a college setting. Of the Jackson County homeschool graduates who reported an ACT college entrance examination score, the mean score was 26. Of Jackson County public school graduates reporting ACT scores, the mean score was 22. The individual scores of both the homeschool graduates and the public school graduates were analyzed using the T-test, and it was found that the relationship between the scores of the homeschool graduates and the public school graduates was statistically significant at the .05 level.

Nationally, according to Golden (2000), the mean score on the ACT for homeschoolers between 1996-1999 was 22.7 and the mean score for public school students on the ACT during the same time frame was 21.0. The homeschool graduates of Jackson County did score higher than the public school graduates, which is consistent with national trends, however, the Jackson County homeschool graduates also scored 3.3 points higher than did homeschoolers on a national level.

The statistics noted by Schumm (1994) in his Midwest study of homeschooling families found that homeschooling families have a mean number of children of 4.1, while families who opt for conventional schooling have a mean number of children of 2.3. The homeschool graduates from Jackson County come from families with fewer children than Schumm's regional findings would suggest, while the public school graduates come from families with more children than was found on a regional level. In Jackson County, the homeschool graduates had a mean of 3.4 children per family, and the public school graduates came from families with a mean of 3.09 children per family. When analyzed using a T-test, it was found that the relationship between the number of children in families of homeschool graduates and the number of children in families of public school graduates was not significant.

When comparing the marital status of the parents at the time the participants in the study graduated from high school, it was found that of parents of homeschool graduates, 100% were married at the time the study participants graduated from high school. This is consistent with Schumm's Midwest findings that 100% of homeschooling families were intact families (1994). Although less than the homeschool graduates' families, the majority of public school graduates from Jackson County also came from

intact families, with 80.5% of the participants' parents married at the time of graduation, 17.1% divorced, and 2.4% widowed. Although it appears that the marital status of the parents of the homeschool graduates and public school graduates at the time of graduation are slightly different, when analyzed using the Chi-square statistical analysis, it was found that the difference between the marital status of the parents of homeschool graduates and the marital status of the parents of public school graduates, at the time of graduation, was not statistically significant.

Also studied were the educational levels and occupations of the parents of both public school and homeschool graduates. A wide margin of educational levels was found when comparing fathers of public school graduates and fathers of homeschool graduates in Jackson County. Public school fathers tended to be more educated, as 56.1% pursued post-secondary training or education, as compared with 43.9% who held a high school diploma or less. The fathers of the homeschool graduates had less post-secondary education or training than did fathers of public school graduates. Of fathers of homeschool graduates, 35.3% opted to pursue post-secondary education or training, while 64.7% had a maximum high school education.

Although a wide margin of educational levels of fathers from both groups of graduates was noted, when broken down into two groups (those with education completed at or below the high school level and those with post-high school education) and analyzed by the Chi-square statistical analysis, it was found that the level of difference between the education levels of the fathers of homeschool graduates and public school graduates was not statistically significant.



The fathers of homeschool graduates from Jackson County were quite different from Ray's (1997) national findings regarding the educational levels of fathers in homeschooling households. Ray found that 76% of fathers in homeschooling families had some type of post-secondary education, while 24% had a high school education or less.

When comparing the mothers of public school and homeschool graduates of Jackson County, it was found that the homeschool mothers tended to be the more educated group. In fact, the mothers of Jackson County homeschool graduates were the most educated group of parents in this study. Of the mothers of homeschool graduates, 64.7% had some type of post-secondary education or training, as compared to 54% of the public school mothers. A high school diploma was the maximum level of education of 35.3% of the mothers of homeschool graduates, as compared to 43.9% of the mothers of public school graduates. Although various levels of education are represented by the mothers of both groups of graduates, when broken into two groups (those with education at or below the high school level and those with post-secondary education) and analyzed using the Chi-square statistic, it was found that there was no statistically significant difference between the two groups of mothers and their levels of education.

When comparing the mothers of homeschool graduates from Jackson County with mothers of homeschoolers nation-wide, the trend in their education is similar. Nationally, 73% of mothers who homeschool have some level of post-secondary education or training and 27% have a high school education or below (Ray, 1997).

Of the mothers examined in this study, 12% of the mothers of public school graduates were homemakers as compared with 58.82% of mothers of homeschool

graduates. The significant level of mothers of homeschool graduates who stay at home is consistent with Schumm's (1994) Midwest findings that the fathers in homeschooling families tended to work outside the home while the mother held the majority of the teaching responsibilities. The mothers of Jackson County homeschool graduates did, in fact, provide the majority of the instruction to the homeschooled students. Mothers were the primary instructors for 44.54% of the coursework. The remainder of instruction was provided by a variety of other instructors. The fact that mothers of Jackson County homeschool graduates were their children's primary teachers is consistent with the national trends noted by Wahisi (1995), who also noted that nationally, mothers are the primary teachers of their homeschooled students. Of the Jackson County homeschool graduates, the mothers and fathers working together as a team to instruct their students was the second most used means of instruction (13.45%). Fathers provided for 8.4% of the instruction to the homeschooled graduates surveyed. This differs from the Midwest research done by Bergen, McGraw, and Schumm (1993). They found that fathers usually took responsibility for one particular area of their children's education—typically science, religion, or physical education. This trend was not found in the Jackson County research. Fathers provided the same amount of instruction in the area of math as the mothers did, however, it does not appear from the data collected that fathers, as a group, took obvious responsibility for any area of instruction.

In addition to gaining academic skills via instruction at home, 82.4% of the homeschool graduates and their families took part in a local homeschooling co-op group. This group provided opportunities for learning through group activities, such as field trips, sporting events, speakers, art lessons, and various other opportunities. In this

regard, the homeschool graduates of Jackson County are much like homeschoolers nationwide, as according to Everhart and Harper (1997), it is common for local groups of homeschoolers to come together to form co-ops to teach some courses such as music, art, and physical education.

Finally, Bergen, McGraw, and Schumm (1993) reported that 65% of families homeschool to instill religious beliefs in their children and 22% do so for attainment of academic excellence. Reasons Jackson County families homeschooled their children were similar to these nation-wide reasons. While the homeschool graduates gave many reasons why their families decided upon homeschooling as a means of educating their children, 11.8% of the students said that homeschooling provided an opportunity to become well grounded in the Bible, and 23.5% of the graduates said that homeschooling provided a better education than would their local public school district.

Overall, there were noteworthy differences found between the Jackson County homeschool and public school graduates, and those public school and homeschool groups studied on a national level. These differences will be summarized in the following chapter.

## CHAPTER V

### Summary, Conclusions, and Recommendations

The final chapter in this study includes a summary of the study and its findings, conclusions that can be drawn from the data, and recommendations for further research on this topic.

#### Summary

The purpose of this study was to determine the level of difference between the frequency of post-secondary choices expected for public school and homeschool graduates in Jackson County, and then compare that data with the already observed frequency of post-high school choices made by conventionally schooled and homeschooled students on a national level.

The subjects of the study were 41 public school graduates, comprised of 22 boys and 19 girls, and 17 homeschool graduates, comprised of 13 boys and four girls, who graduated between 1995 and 2000, all of whom resided in Jackson County at the time of graduation. After developing a list of randomly selected public school graduates and a list of all known homeschool graduates, the researcher learned from community members whom the parents of the graduates were, and contacted them by phone asking permission to send their graduates a letter explaining the study and verifying the graduates' addresses and phone numbers. The participants were each sent a letter explaining the study and then were phoned by the researcher, who administered a telephone survey, within two weeks of the mailing of the letter. At the time of the phone call, questions regarding the graduate's year of graduation, form of education, school district of residence, college entrance exams and scores, post-secondary choices, education and occupations of the

parents, marital status of parents at the time of graduation, and number of children in the family were asked. For graduates who were homeschooled, additional questions regarding grades for which they were homeschooled, primary instructor per subject area, participation in cooperative education opportunities, coursework taken at public high schools, and reasons for homeschooling were asked. The responses to the questions were transferred to a survey form by the researcher.

The data collected on the telephone survey forms was then analyzed by using frequencies, percentages, T-test, and Chi-square statistical analysis. The following findings were discovered from the data collected.

- Of the Jackson County homeschool graduates, 52.9% chose post-secondary education
- Of Jackson County public school graduates, 85.4% pursued post-secondary education.
- The level of difference between the post-secondary choices of Jackson County homeschool graduates and Jackson County public school graduates was found to be statistically significant at the .01 level.
- Jackson County homeschool graduates who took the ACT college entrance exam earned a mean score of 26.
- Jackson County public school graduates who took the ACT college entrance exam earned a mean score of 22.
- The relationship between the ACT scores of Jackson County homeschool graduates and Jackson County public school graduates was found to be significant at the .05 level.

- Families with homeschool graduates in Jackson County have, on average, have 3.4 children.
- Families with public school graduates in Jackson County have an average of 3.09 children.
- The relationship between the number of children in the families of Jackson County homeschool graduates and Jackson County public school graduates was not statistically significant.
- All of the parents of homeschool graduates were married at the time their students graduated.
- Most (80.5%) of parents of public school graduates were married at the time their students graduated.
- The level of difference in marital status of the parents at the time of graduation of Jackson County homeschool graduates and Jackson County public school graduates was not statistically significant.
- Mothers of homeschool graduates in Jackson County were the most educated group of parents with 64.7% having some form of post-secondary education or training.
- The difference in the level of education of mothers of Jackson County homeschool graduates and Jackson County public school graduates was not statistically significant.
- Fathers of homeschool graduates in Jackson County were the least educated group of parents, with 35.5% having some form of post-secondary education or training.

- Over half (58.8%) of the mothers of Jackson County homeschool graduates were homemakers.
- The difference in the level of education of fathers of Jackson County homeschool graduates and Jackson County public school graduates was not statistically significant.
- Twelve percent of mothers of Jackson County public school graduates were homemakers.
- Mothers of homeschool graduates in Jackson County were the primary instructors for their children, providing instruction 44.54% of the time.

### Conclusions

Results of this study showed that more public school graduates in Jackson County (85.4%) pursued post-secondary education or training than did Jackson County homeschool graduates (52.9%). The level of difference regarding these decisions was found to be significant at the .01 level. Compared with Ray's (1999) national statistics, however, more public school graduates pursued post-secondary education (85.4%) than did conventionally schooled graduates on a national level (71%). Nationally, according to Ray (1999), more homeschool graduates pursue post-secondary education (69%) than did homeschool graduates from Jackson County (52.9%).

Although more Jackson County public school graduates did pursue post-secondary training or education, the Jackson County homeschool graduates scored higher on the ACT college entrance exam, with a mean score of 26, compared with the public school graduates' mean score of 22. The difference in the ACT scores of the two groups was found to be statistically significant at the .05 level. When compared to the national

statistics presented by Golden (2000), both groups of graduates from Jackson County scored higher than the national averages would have suggested. Nationally, homeschoolers between 1996 and 1999 scored an average of 22.7 on the ACT while Jackson County homeschoolers graduating between 1995 and 2000 scored an average of 26. Nationally, public school students between 1996 and 1999 scored an average of 21.0 while Jackson County public school students graduating between 1995 and 2000 scored an average of 22.

In terms of the families the Jackson County graduates come from, families who homeschooled tend to have slightly more children in the family unit, with a mean of 3.4 children, while the public school graduates come from families with a mean number of 3.09 children. The relationship between the number of children per family and whether the family was one of a homeschool or public school graduate was not statistically significant. When compared to Schumm's (1994) national statistics, however, families on the national level who homeschool tend to have more children (4.1) than do the families of the Jackson County homeschool graduates (3.4). The families of Jackson County public school graduates had more children, on average (3.09) than did families of conventionally schooled children on a national level (2.3)

The difference between the marital statuses of the parents of the homeschool graduates and the public school graduates was not found to be statistically significant, although at the time of high school graduation, it was found that 100% of the parents of the Jackson County homeschool graduates were still married, while 80.5% of the parents of the Jackson County public school graduates were still married.



Regarding parent education, mothers of the homeschool graduates had the most education, with 64.7% having post-secondary education or training. Interestingly, fathers of the homeschool graduates had the least education of the public school or homeschool graduates' parents, with only 35.5% having post-secondary education or training. Nationally, according to Ray (1997), mothers of homeschoolers had more post-secondary education (73%) than did mothers of Jackson County homeschool graduates (64.7%). Compared Ray's (1997) national statistics, fathers of Jackson County homeschool graduates had considerably less post-secondary education (35.3%) than did fathers of homeschoolers on a national level (76%).

More of the mothers of homeschool graduates were homemakers (58.8%) than were mothers of public school graduates (12%), however the mothers of the homeschool graduates also were the primary instructors for their children's education, providing for their instruction 44.54% of the time.

The family backgrounds of the two groups of graduates, including education levels of the parents, number of children in the family, and the marital status of the parents at the time the graduates completed high school was not found to be significantly different. The two statistically significant differences found between the two groups regarded the ACT scores earned and the post-secondary decisions made by the graduates. The homeschool graduates scored significantly higher on the ACT, although significantly more of the public school graduates pursued post-secondary education or training.

### Recommendations

As a result of this study, recommendations for further research in this topic area would be:

- Developing a method to track post-secondary decisions made by homeschool graduates.
- Studying graduates five years after graduation to determine the percentage of students from both groups who also completed post-secondary training or education.
- Compare Wisconsin homeschool graduates with homeschool graduates from a state such as Minnesota, which, unlike Wisconsin, has very structured policies regarding homeschooling, to determine any differences between graduates, which may stem from homeschool policy.

The studying of homeschooled students in the state of Wisconsin will continue to be difficult as long as there continues to be a lack of a comprehensive list of students and their grade levels compiled by the Department of Public Instruction or any other organization.

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APPENDIX A

Participant's Letter of Explanation

W10115 Levis Creek Rd.  
Black River Falls, WI 54615

Dear

I am a graduate student at UW-Stout, teacher and resident of Black River Falls. As a local educator, I am interested in learning more about the decisions students graduating from Jackson County public high schools and students from Jackson County who have been homeschooled make following completion of their secondary education.

Students who have graduated from either a public high school in Jackson County or completed homeschool programs have been randomly selected to participate in this study. I will be contacting you within the next two weeks with a short telephone survey containing several questions regarding your high school years, your family, and your decisions following graduation.

You are not required to participate in this survey, which is gathering information about your high school years, your family, and your decisions following graduation. By answering the questions during the telephone survey, you are giving your informed consent as a participating volunteer in this study. You may discontinue your participation during the survey at any time. Please note that at the conclusion of this study, all records identifying individual participants will be destroyed.

I look forward to talking with you soon!

Sincerely,

Heather Luecke

NOTE: Questions or concerns about participation in the research or subsequent complaints should be addressed first to the researcher, Heather Luecke (715) 284-0522, or research advisor, Dr. Karen Zimmerman (715) 232-2530 and second to Dr. Ted Knous, Chair, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research, 11 HH, UW-Stout, Menomonie, WI, 54751, phone (715) 232-1126.

APPENDIX B  
Telephone Survey

## Homeschooling and Public Schooling Questionnaire

Hello, my name is Heather Luecke. I am a graduate student at UW-Stout, and I am comparing the choices made by former home schooled students and public schooled students from Jackson County who graduated between 1996 and 2000. Would you be willing to answer several questions about your high school years and your choices after high school?

yes  no

Please know that by answering these questions, you are giving your consent for participation in this study. If you do not feel comfortable answering any of the following questions, please do not feel obligated to answer. You can request that I discontinue this survey at any time.

Male  Female

1. What year did you graduate from high school?

1995  1996  1997  1998  1999  2000

2. At the time of your graduation, did you attend public school or were you homeschooled?

public school  homeschooled

3. Which school district did you reside in at the time of graduation?

Black River Falls  Alma Center/Humbird/Merrillan

Melrose/Mindoro  Blair/Taylor

If Blair/Taylor Graduate: Did you reside in Jackson County at the time of graduation?

Yes  No

If Melrose/Mindoro Graduate: Did you reside in Jackson County at the time of graduation?

Yes  No



4. Did you take the ACT?

Yes  No

If yes, what was your score?

5. What did you choose to do your first year after completing high school?

work  technical college  2-year college

4-year college/university  military  other:

6. What is the highest level of education completed by your mother?

middle school  high school  bachelors degree

Masters Degree  Doctoral Degree  other:

7. What is the highest level of education completed by your father?

middle school  high school  bachelors degree

Masters Degree  Doctoral Degree  other:

8. What is your mother's occupation?

9. What is your father's occupation?

10. How many children are in your family?

11. At the time of your graduation from high school, what was the marital status of your parents?

married  divorced  separated  never married  other:

HOMESCHOOLED STUDENTS ONLY

12. Which grades were you homeschooled?

\_\_\_K \_\_\_1 \_\_\_2 \_\_\_3 \_\_\_4 \_\_\_5 \_\_\_6  
 \_\_\_7 \_\_\_8 \_\_\_9 \_\_\_10 \_\_\_11 \_\_\_12

13. Who taught:

Math \_\_\_mom \_\_\_dad \_\_\_other:

Science \_\_\_mom \_\_\_dad \_\_\_other:

English \_\_\_mom \_\_\_dad \_\_\_other:

History/Civics \_\_\_mom \_\_\_dad \_\_\_other:

Religion \_\_\_mom \_\_\_dad \_\_\_other:

PhyEd \_\_\_mom \_\_\_dad \_\_\_other:

Foreign Language \_\_\_mom \_\_\_dad \_\_\_other:

14. Did you participate in any cooperative education opportunities?

\_\_\_yes \_\_\_no

If yes, what?

15. Did you take any courses at your local high school?

\_\_\_yes \_\_\_no

If yes, which ones?

16. Why did your family choose homeschooling?

Thank you for answering these questions! I appreciate your participation!

## APPENDIX C

### T-Test Statistical Analysis Tables

Table C<sub>1</sub>T-Test Data for Homeschool and Public School Graduates' ACT Scores $N_A$ =Homeschool Graduates

A=Homeschool ACT Scores

 $A^2$ =Homeschool ACT Scores Squared $N_B$ =Public School Graduates

B=Public School ACT Scores

 $B^2$ =Public School ACT Scores Squared

$N_A$	A	$A^2$	$N_B$	B	$B^2$
A-1	N/A	N/A	B-1	20	400
A-2	N/A	N/A	B-2	N/A	N/A
A-3	N/A	N/A	B-3	27	729
A-4	N/A	N/A	B-4	28	784
A-5	N/A	N/A	B-5	23	529
A-6	N/A	N/A	B-6	N/A	N/A
A-7	30	900	B-7	22	484
A-8	29	841	B-8	20	400
A-9	23	529	B-9	24	576
A-10	N/A	N/A	B-10	27	729
A-11	19	361	B-11	N/A	N/A
A-12	N/A	N/A	B-12	21	441
A-13	26	676	B-13	N/A	N/A
A-14	24	576	B-14	22	484
A-15	N/A	N/A	B-15	N/A	N/A
A-16	N/A	N/A	B-16	27	729
A-17	30	900	B-17	25	625
			B-18	20	400
			B-19	N/A	N/A
			B-20	19	361
			B-21	23	529
			B-22	24	576
			B-23	N/A	N/A
			B-24	23	529
			B-25	19	361
			B-26	N/A	N/A
			B-27	N/A	N/A
			B-28	N/A	N/A
			B-29	N/A	N/A
			B-30	19	361
			B-31	25	625
			B-32	27	729
			B-33	N/A	N/A
			B-34	18	324
			B-35	19	361
			B-36	21	441

$N_A$	A	$A^2$	$N_B$	B	$B^2$
			B-37	23	529
			B-38	19	361
			B-39	17	289
			B-40	26	676
			B-41	18	324
17	181	4,783	41	646	14,686

Table C<sub>2</sub>T-Test Data for Children per Family of Homeschool and Public School Graduates $N_A$ =Homeschool Graduates

A=Children per Homeschool Family

 $A^2$ =Children per Homeschool Family Squared $N_B$ =Public School Graduates

B=Children per Public School Family

 $B^2$ =Public School ACT Scores Squared

$N_A$	A	$A^2$	$N_B$	B	$B^2$
A-1	5	25	B-1	4	16
A-2	3	9	B-2	3	9
A-3	4	16	B-3	2	4
A-4	2	4	B-4	2	4
A-5	2	4	B-5	3	9
A-6	3	9	B-6	3	9
A-7	3	9	B-7	3	9
A-8	3	9	B-8	2	4
A-9	3	9	B-9	3	9
A-10	5	25	B-10	2	2
A-11	4	16	B-11	3	9
A-12	4	16	B-12	3	9
A-13	2	2	B-13	4	16
A-14	2	2	B-14	4	16
A-15	5	25	B-15	2	4
A-16	4	16	B-16	2	4
A-17	3	9	B-17	2	4
			B-18	4	16
			B-19	4	16
			B-20	2	4
			B-21	6	36
			B-22	2	4
			B-23	4	16
			B-24	2	4
			B-25	4	16
			B-26	4	16
			B-27	4	16
			B-28	3	9
			B-29	2	4
			B-30	4	16
			B-31	4	16
			B-32	4	16
			B-33	2	4
			B-34	2	4
			B-35	4	16
			B-36	3	9

$N_A$	A	$A^2$	$N_B$	B	$B^2$
			B-37	3	9
			B-38	4	16
			B-39	2	4
			B-40	3	9
			B-41	4	16
17	57	193	41	127	431

## APPENDIX D

## Chi-Square Statistical Analysis Table



Table D<sub>1</sub>

Actual Distribution of Graduates by Educational Institution and Post-Secondary Decisions

<i>Institution</i>	<i>Work</i>	<i>Post-Secondary Education</i>
Homeschool	9	8
Public School	6	35
<b>Total</b>	15	43

Table D<sub>2</sub>

Expected Distribution of Graduates by Educational Institution and Post-Secondary Decisions

<i>Institution</i>	<i>Work</i>	<i>Post-Secondary Education</i>
Homeschool	4.4	12.6
Public School	10.6	30.4
<b>Total</b>	15.0	43.0

Table D<sub>3</sub>Actual Distribution of Mothers by Levels of Education and Graduates' Educational Institutions

<i>Institution</i>	<i>High School</i>	<i>Post-Secondary Education</i>
Homeschool	5	12
Public School	17	23
<b>Total</b>	22	35

Table D<sub>4</sub>Expected Distribution of Mothers by Levels of Education and Graduates' Educational Institutions

<i>Institution</i>	<i>High School</i>	<i>Post-Secondary Education</i>
Homeschool	6.6	10.4
Public School	15.4	24.6
<b>Total</b>	22.0	35.0

Table D<sub>5</sub>Actual Distribution of Fathers by Levels of Education and Graduates' Educational Institutions

<i>Institution</i>	<i>High School</i>	<i>Post-Secondary Education</i>
Homeschool	9	8
Public School	18	23
<b>Total</b>	27	31

Table D<sub>6</sub>Expected Distribution of Fathers by Levels of Education and Graduates' Educational Institutions

<i>Institution</i>	<i>High School</i>	<i>Post-Secondary Education</i>
Homeschool	7.9	9.1
Public School	19.1	21.9
<b>Total</b>	27.0	31.0

Table D<sub>7</sub>Actual Distribution of Parents by Marital Status and Graduates' Educational Institutions

<i>Institution</i>	<i>Married</i>	<i>Single Parent</i>
Homeschool	17	0
Public School	33	8
<b>Total</b>	50	8

Table D<sub>8</sub>Expected Distribution of Parents by Marital Status and Graduates' Educational Institutions

<i>Institution</i>	<i>Married</i>	<i>Single Parent</i>
Homeschool	14.7	2.3
Public School	35.3	5.7
<b>Total</b>	50.0	8.0