RESIDENTIAL SCHOOLS AND GIFTED STUDENTS

A Master's Thesis

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Master of Arts in Education, Gifted

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by

Marvin M. Lee

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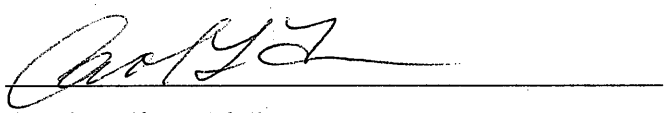
Approved July 2008 by



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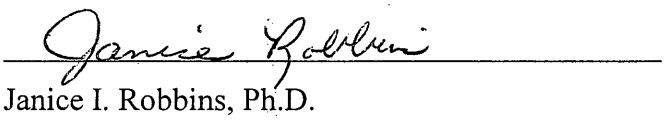

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I dedicate this work to my country, the Philippines, to whom I am deeply indebted for my education; and to God, who made all of these things possible.

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RESIDENTIAL SCHOOLS AND GIFTED STUDENTS

ABSTRACT

There have been numerous published literatures relating to residential schools for the gifted. Among these are studies on the effects of residential schools on gifted students' academic and socioemotional development. However, there is no comprehensive literature review that ties together the findings of these different studies on residential schools. The purpose of this study was to provide a comprehensive literature review on the effects of these residential school programs on gifted students' development.

The findings of this literature review led to the conclusion that gifted students may not be receiving coursework that is challenging enough for them in their home schools. Furthermore, residential school programs can provide the academic and socioemotional needs of gifted students who are ready for such programs. However, some factors need to be considered in order to ensure the success of gifted students in residential school programs.

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Chapter 1

Introduction of Topic

Gifted students all around the United States are educated through a continuum of services, which ranges from the most restrictive to the least restrictive (Cross & Miller, 2007). These services include pullout programs, advanced classes, varied grouping strategies, acceleration, differentiation of curriculum and instruction, dual enrollment, magnet schools, self-contained classes, and residential academies. Of these services, the residential school program is a relatively new service delivery option for gifted students (Davis & Rimm, 2004). There are at least two types of residential school programs for gifted students: the academic year residential schools and summer residential school programs (Swassing & Fichter, 1992).

The first residential school for gifted students was established in 1980 in North Carolina. The North Carolina School for Science and Mathematics (NCSSM) was opened to serve high school students (11^{th} and 12^{th} graders) who were academically gifted in science and mathematics (Eilber, 1987). Soon after, the Louisiana School for Mathematics, Science and Technology, and the Illinois Mathematics and Science Academy were established (Mace, 1997) with the mission of providing appropriate education to the two states' most academically gifted high school students. Seven more states followed suit in opening their own residential schools for gifted students from 1980 to 1990 (Kollof, 2003).

There are a number of residential school programs for the gifted all over the country that operate during the academic year and during the summer. Currently, there are at least 18 academic year residential academies for the gifted in 16 different states

(Stamps, 2006). According to Cross and Miller (2007), these residential schools can be categorized into three different models based on the program's focus: Model One residential schools focus on the development of science and mathematics; Model Two residential schools focus on the development of arts and humanities; and Model Three residential schools focus on early entrance to college programs. Aside from these academic year residential schools, there are also summer residential programs for the gifted. These programs typically last from a week to several weeks. Summer residential programs can be classified into two major groups: the summer residential Governor's schools programs and other summer residential programs offered by different colleges, universities, and those offered by other institutions like the National Aeronautics and Space Administration (NASA).

Residential school programs play a vital role in the education gifted and talented students. These schools provide gifted students with special and unique opportunities that are not usually available in the traditional school setting. According to Rigsby (1988), residential schools for the gifted "offer 24-hour-a-day learning and living environments where gifted students have access to laboratories, computers, classrooms, libraries and teachers many hours beyond the usual school day" (p.97). They also provide gifted students with advanced and challenging curricula, an education that addresses their needs, and access to faculty who are familiar with their needs and are experts in their field (Kollof, 2003). Coleman (2005) suggests that residential school programs also address the socioemotional needs of the gifted by providing them with a special environment wherein they can interact, debate and discuss ideas, and build friendships with same ability peers (as cited in Cross & Miller, 2007, p.101).

Although residential school programs offer numerous benefits to the gifted, there are also some concerns about them. Arguments against residential programs include concerns over the so called "brain drain" that might happen to local schools when the top students are taken away from them; concerns relating to placing high school age students on campuses together with older students; and concerns on the possibility of the propagating of elitism among gifted students (Kollof, 2003).

Statement of Problem

According to the National Association for Gifted Children (NAGC, 2008), approximately 6% of the student population in the United States are academically gifted students. This percentage amounts to a total of approximately three million students. All of these gifted students have special academic and socioemotional needs that should be addressed so that they may reach their full potential. Programs and services that address these needs take place in the regular school setting and in specialized environments outside the traditional classroom. Unfortunately, funding and resources for gifted programs and services delivered in the regular classrooms are marginalized due to a shift and increase in focus for high stakes testing in the regular classroom (Moon, Brighton, & Callahan, 2003) brought about by the *No Child Left Behind* Act of 2001 (P.L. 107-110; Elementary and Secondary Education Amendments of 2001). Another means of assuring that the needs of gifted students are met is through the propagation of more specialized environments like the residential schools for the gifted (Coleman, 1995). In order to determine the viability of residential school programs as alternatives to the gifted programs offered in the regular classroom, one must look into the existing literature on the effects of these programs on gifted students' development.

There have been numerous published articles relating to residential schools for the gifted. Among these are descriptions of different residential school programs existing in the U.S. and studies of the effects of residential schools on gifted students' academic and socioemotional development. In the research area relating to the effects on gifted students, most of the available literature focuses on the specific effects of residential schools on gifted students. Socioemotional effects of residential schools on gifted students have been studied by authors like Coleman (2001), Cross, Cassady, and Miller (2006), Dixon, Lapsley, and Hanchon (2004), Enersen (1993), Jin and Moon (2006), Rinn (2004), and Speirs Neumeister, Williams, and Cross (2007). Other studies focus on the academic benefits (Adams Byers, Whitsell, Moon, 2004; Coleman, 2002; Enersen, 1993; Lynch, 1992; Rinn, 2004). Gender specific effects have also been researched by several authors such as Cornell, Callahan, and Loyd (1991a; 1991b), Cross, Speirs Neumeister, and Cassady (2007), and Yadusky-Holahan and Holahan (1983). However, there is no comprehensive literature review that ties together the findings on these different effects residential schools for the gifted have on gifted students. The purpose of this study is to conduct a comprehensive literature review that will provide an overview of the effects of residential schools on gifted students' development. The study will be guided by the following questions:

1) What are the effects of residential schools on gifted students' academic development?

2) What are the effects of residential schools on gifted students' socioemotional development and adjustment?

3) Are there any gender-specific effects of attending a residential school on gifted students' development?

4) Does attending a residential school for the gifted have any long-term effects on gifted students' development?

Brief Review of Relevant Literature

Stanley (1987) suggested "states that have at least 300 National Merit semifinalists each year should consider the possibility of residential high schools" (p.770). Residential schools for the gifted play a very important role in addressing the needs of gifted and talented students (Kollof, 2003). In order to fully comprehend how these residential schools work to address these needs, one must look at the written works of several authors on this subject. Mace (1997) provided a brief history of the events that took place that led to the establishment of the first residential school for the gifted in the country. Stanley, in his two articles entitled, *State Residential High Schools for Mathematically Talented Youth* (1987), and *A Better Model for Residential High Schools for Talented Youths* (1991a), talked about how states can prepare highly qualified students in mathematics through residential schools for the gifted, and offered a model and some guidelines in establishing these residential schools for the gifted. Savage and Werner (1994) discussed that residential schools for the gifted can be used to deliver programs and services to gifted student in rural areas where resources are limited. Cross and Miller (2007) provided an overview of the similarities and differences of several residential schools for the gifted all over the country, and offered several models that can be used classify these schools. Stephens (1998) provided a closer look at the profile of the students, faculty, and curricula of 11 residential schools for mathematics and science, and

concluded "these schools serve as catalysts for leadership in the advancement and the application of knowledge in the mathematics and science fields" (p.91). Coleman (1995) emphasized the power of the social contexts that these specialized educational environments provide and the role that they play in developing giftedness.

Many studies have also been conducted on the effects that residential schools for the gifted have on the academic and socioemotional development of gifted students. In a study on a sample of gifted students who participated in at least three years of Purdue University's residential program for the gifted, students reported being very satisfied with the fast-paced and challenging coursework provided by the program, and the opportunity to discuss and debate ideas with like minds (Enersen, 1993). Furthermore, these students also felt that the program addressed their socioemotional needs because they were able to interact with peers "who are like them, make new friends, and gain confidence in their own abilities." This study further supports what Coleman (2005) identifies in his book, *Nurturing Talent in High School: Life in the Fast Lane*, as the benefits of residential school programs for gifted students. However, another study by Adams-Byers, Whitsell, and Moon (2004), had mixed results relating to the gifted students' (grades 5-11) perceptions of the academic and socioemotional effects of homogeneous grouping that occur in residential schools and flexible heterogeneous grouping that happen in traditional classroom settings. Their study shows that gifted students see homogeneous groupings as beneficial with respect to academic outcomes but had mixed feelings regarding which setting would best meet their social needs. This raises some questions about the effects that homogeneous groupings in the residential school settings have on the social development of the gifted student. What effects do residential schools have on

gifted students' socioemotional development? What are the different factors that may affect gifted students' socioemotional adjustment in a residential setting? Another aspect that should be considered when talking about the effects of these residential schools on the gifted is gender. What effects do residential schools for the gifted have on gifted males or on gifted females? A study by Cornell, Callahan, and Loyd (1991b), which compared the personality growth of gifted females enrolled in a residential early college entrance school with gifted females who attended traditional high school college preparatory classes, showed that the students enrolled in the residential program had a healthier personality growth pattern, as evidenced by the positive increase in 14 out of 20 subscales of the California Personality Inventory (CPI; Gough, 1987) at the second testing, than those who attended the traditional high school program.

Although outcomes of attending residential schools for the gifted tend to be favorable, there are also some areas for concern. A study by Dorsel and Wages (1993), indicated that students who participated in a residential Governor's school program overall had positive experiences and positive perceptions about the program. However, during the course of the year these positive feelings and perceptions turned slightly negative because the students perceived decreases in their potential for getting into better colleges. According to Cross and Miller (2007), residential schools for the gifted may not be appropriate to some gifted students because some students "may not be ready to live away from family and friends, do not want to give up their other school activities, or have other needs that would be better met in a nonresidential setting" (p.102).

Definition of Terms

Academic year residential schools. Academic year residential schools are state-sponsored residential programs for qualified gifted students that operate during the academic year; that usually focus on mathematics and science, the arts and the humanities, and early entrance to college (Cross & Miller, 2007); and are usually offered free of charge or for a reduced tuition fee.

Summer residential Governor's schools. Summer residential Governor's schools are state-sponsored residential programs for qualified high school gifted students that operate during the summer; are typically held in college campuses and universities; and are either free of charge or for a reduced tuition fee (National Conference of Governor's Schools, 2008).

Other Summer Residential Programs. Other summer residential programs offered by colleges, universities and other institutions serve gifted students in the elementary, middle, and high school levels; and attendance in these summer residential schools is usually financed by the parents of the students.

Long-term effects. Long-term effects pertain to the effects of the residential schools for the gifted on the students' overall development after they have finished attending the residential schools. These effects may include career success/failure, academic achievement outside the residential school, pursuance of advanced degrees and social, emotional and psychological development after attendance in residential schools/programs for the gifted.

Procedure for Conducting the Study

For this study, a literature search was performed among major journals and periodicals in the field of education. Major journals and periodicals primarily consisted of *Gifted and Talented International, Gifted Child Quarterly*, *Journal for the Education of the Gifted*, *Journal of Secondary Gifted Education*, *Review of Education Research*, *Roeper Review,* and *Gifted Child Today*. Different websites were also visited in search for information on the subject.

Online databases were also utilized in searching for related literature. The databases used included Academic One File, Academic Search Complete, EBSCOHost, Educational Research Complete, ERIC, Info trac, PsycINFO. Combinations of the following keywords were used to facilitate online database search:

> academic, academic needs, aspirations, career, elementary, gender effects, gifted, gifted students, governor's schools, heterogeneous grouping, high school, homogeneous grouping, leadership, long-term, middle school, minority, negative effects, residential schools, social–emotional effects, summer programs, types.

Information and literature gathered through searches in journals, periodicals, online databases, and websites were reviewed as to their relevance to this study. Published literature from the 1980's to the present was considered since the first residential school for the gifted was established in the 1980's. Due to the limited availability of literature on residential schools for the gifted, articles from the 1980's, though dated, were still reviewed to ensure an inclusive study.

Information and articles deemed relevant were then further analyzed as part of this literature review.

Application of the Study to Concepts/Practices in Gifted Education

Since this literature review is aimed at providing a comprehensive analysis of the benefits and drawbacks of attending residential schools, it is the hope of the author that first, it may primarily contribute to the understanding of the concept of residential schools for the gifted and their viability as alternatives to gifted programs offered in the traditional classroom setting.

Second, the findings of this study may be used as an aid in identifying areas for improvements in residential schools for the gifted and help these schools continue to enhance positive effects, and identify then address possible causes of negative effects on gifted children.

Third, this literature review can help in the identification of research gaps, areas of limited or unavailable studies, on the subject of residential schools for the gifted.

Since the literature review cites a number of benefits from attending residential schools for the gifted, it can be used to advocate increased allocation of funding and resources for residential schools for the gifted, and the establishment of more residential programs for gifted students in the United States.

In addition to these, other countries without existing residential schools for the gifted can also utilize the results of this study in their evaluation of the possible establishment of residential schools for the gifted in their own respective countries.

Limitations of the Study

The greatest limitation to this study is the limited number of research articles written on the area of residential schools for the gifted. Consequently, some of the articles and studies included in this literature review are dated.

Another limitation of the review is that the studies and articles included mainly focused on the residential schools that serve high school gifted students. Although there are summer residential school programs for elementary gifted students, there are only a few available studies on them.

A majority of the studies included in this literature review pertain to residential schools for the gifted in the United States. Very few studies on residential schools for the gifted in other countries are available and included in this literature review. Any possible culture-specific differences on the effects of residential programs for the gifted were not considered as part of the scope for this study.

Delimitations of the Study

Due to the limited number of research articles on the subject of residential schools for the gifted, the researcher chose to include published literature dating back to the 1980's.

The researcher of this study also decided to focus mainly on effects of public residential school programs on gifted students' development; and did not consider any possible effects that private boarding school programs may have on gifted students' development. This is due to the paucity in research on private boarding schools for gifted students.

Chapter 2

Effects of Residential Schools on the Gifted Student's Academic Development

Three studies were included in this section of the literature review featuring the effects of residential schools on gifted students' academic development. These include Coleman's (2002) ethnographic inquiry on gifted students' academic life in a residential school for the gifted focusing on studying and doing homework; Adams-Byers, Whitsell, and Moon's (2004) study of gifted students' perceptions of the academic and socioemotional effects of homogeneous and heterogeneous grouping; and Enersen's (1993) qualitative study on the value of residential gifted programs on gifted students. The first study by Coleman (2002) was conducted in an academic year residential school. The following two studies by Adams-Byers, Whitsell, and Moon (2004) and Enersen (1993) were conducted in the summer residential school setting. These two studies also examined the effects of residential schools on gifted students' socioemotional development. All three studies were chosen for the literature review because they offer a broad picture; in terms of the setting, the types of studies, and the results of the studies, of the effects of residential programs on the academic as well as the socioemotional development of gifted students.

Coleman's (2002) purpose for his ethnographic study was to learn about how gifted students attending an academic year residential high school adjusted to the school's rigorous academic program. He observed how the students met the heavy homework and study demands of residential schools for the gifted. Coleman conducted his study for a period of one academic year, from orientation to graduation. Within the year he attended classes, lived in the dorm, followed students with their permission, interviewed and

conversed with 89 students, and had monthly interviews with a purposeful sample of 4 junior students and 4 senior students. In addition to these he also constructed a questionnaire for the students in order to verify his observations.

The findings from Coleman's (2002) study showed that upon entering the residential schools the students experienced feelings of "shock." These initial feelings of shock originated from being exposed for the first time to an environment where the homework and coursework is always present and is never quite finished; and is amplified by the discovery that strong study skills, which they do not readily possess, are required to meet the demands of this new environment. In his study, Coleman (1993) also discovered four characteristic patterns of adjustment, which he identified as: (1) *taking-it-in-stride*, (2) *defending on the edge*, (3) *socializing over academics*, and (4) *doing the right thing*. The students who fall under the *taking-it-in-stride* pattern of adjustment understand the demands of the residential program and set time to accomplish their homework and coursework. These students use the resources offered by the school to their advantage; if they feel that they need help, they ask for it. The students who are *defending over the edge* are characterized by always feeling the pressure of the academic demands of the school. These students have the weakest study skills among the group and have very strong doubts on being able to adjust to the academic demands of the school. The students who fall into the *socializing over academics* pattern of adjustment are characterized by not sacrificing their social activity over the academic demands of the school unless it is completely necessary. These students are confident about themselves and are not easily overwhelmed by the demands of the program. The students who are *doing the right thing* have very strong family values. These students strongly believe that

it is their obligation to do well in meeting the academic demands of the school. They often push themselves to the limit when meeting the academic demands because they feel that it is the right thing to do.

Coleman's (2002) study of ways in which gifted students adjusted to the academic rigors of a residential school had several strengths that give credibility to his findings. First, the author actually observed and experienced the findings of the study as compared to other studies that may only rely on what the respondents tell the researchers. Second, Coleman also gave questionnaires to participants as a way of validating his observations and experiences; and also, as a way of offsetting the possible biased reactions of the participants in the presence of an observer/researcher. There are also some weaknesses to his study. The findings of his research may be hard to apply to the general population of gifted students attending a residential school program due to the small sample size used in the study. In addition to this, although Coleman conducted questionnaires to validate his observations/experiences, there is still a possibility that the findings of the study may be skewed by the way he interpreted these observations/experiences.

Adams-Byers, Whitsell, and Moon (2004) conducted a study to look at gifted students' view on the academic and socioemotional effects of homogeneous and heterogeneous groupings. Their study involved 44 students from grades 5-11 who participated in a summer residential program for gifted and talented students. The participants of the study were interviewed and were asked to complete researcher-constructed questionnaires. The interviews/questionnaires covered five areas of discussion: (a) the participants' academic and social activities in their home schools, (b) the participants' academic and social activities in the summer residential program, (c) a

comparison and contrast of their activities in their home schools and in the summer residential program, (d) the participant's view of the advantages and disadvantages of heterogeneous grouping, and (e) the participants' view of the advantages and disadvantages of homogeneous grouping.

Their study showed, of the 72 listed responses on the academic advantages and disadvantages of homogeneous grouping, 57 were listed as advantages and 15 were listed as disadvantages. Some of the responses on the advantages of homogenous grouping listed by the participants were: challenging, fast-pace, meaningful discussions, same-ability peers, competent teachers, motivating, no repetition, availability of help and assistance, and independent. On the other hand some of the disadvantages listed were: more intelligent peers, high expectations, heavy workload, stress due to academic competition. Of the 60 listed responses on the academic advantages and disadvantages of heterogeneous grouping, only 16 were under the advantages and 44 were listed under disadvantages. Some of the advantages listed for heterogeneous grouping were: easier, relaxed, more free time. Some of the disadvantages of heterogeneous grouping were: slow pace, low level, boredom, repetition, teacher incompetence, and not motivating. The researchers reported that in terms of academic effects, the students cited more advantages to homogeneous grouping than heterogeneous grouping, and more disadvantages to heterogeneous grouping than homogeneous grouping. In other words, the participants viewed homogeneous grouping as being more advantageous to them in terms of academics as compared to heterogeneous groupings. On the other hand, the study also found out that gifted students had mixed feelings on which setting (homogeneous or heterogeneous) would better meet their social needs. Results from the

study showed that, of the 49 listed responses on the socioemotional advantages and disadvantages of homogeneous grouping, 10 were listed under no disadvantage, 15 were listed under advantage, and 24 were listed under disadvantage. Of the 45 written responses on the socioemotional advantages and disadvantages of heterogeneous grouping, 6 were listed under no advantage, 14 were listed under no disadvantage, and 25 were listed under advantages. A majority of the students who believed heterogeneous grouping as more advantageous to them with regards to their socioemotional development cited the opportunity to help others and the diversity in these groupings as advantages. Another startling result of this study was some students preferred to be in the regular classroom, where there is heterogeneous grouping, because the classes are easier enabling them to attain high class ranking without exerting much effort.

Adams-Byers, Whitsell, and Moon's (2004) study has several strengths. First, the study offers a "first person" view on the advantages and disadvantages of homogeneous and heterogeneous grouping based on the gifted students' perception of their experiences in the summer residential program and their experiences in their home schools. Second, the participants in the study attended a variety of gifted programming options before attending the summer residential program as opposed to a sample coming from a single gifted program, thus the perceptions of the participants regarding grouping represents a wide array of classroom environments, teaching styles, programming options, and geographical and cultural diversity. Third, the study is not one-sided because it compares the effects of residential school gifted programs with nonresidential school gifted programs. The study also had some weaknesses that should be considered when interpreting the results. First, although the study offered some insights from participants

who came from a variety of gifted programming options and school environments, the sample size is not large enough to make safe and conclusive generalizations regarding the results. Furthermore, the reader cannot assume that the students in this study represent the gifted population as a whole. The very fact that they chose to attend a summer residential program separates them from the group of gifted students who chose not to attend the program.

Enersen (1993) conducted her study with purpose of examining the participants' and their parents' view on the academic and socioemotional effects of attending a summer residential school for the gifted. This qualitative study was conducted with 12 students who attended the summer residential program for at least three years and their parents. Enersen (1993) interviewed the students using open-ended questions. The student interviews were guided by questions on (1) the experiences and events that stood out during the program; (2) the effects of the program on the students' academic, social, and emotional lives; (3) the reasons for coming back to the program; (4) the impact of the program on the students' college and career plans; and (5) the negative aspects of the summer residential programs. In addition to this, the researcher also interviewed the parents of the participants. The questions for the parents focused on (1) the reasons why their children returned to participate in the summer program, and (2) their perceptions on the value of the summer program to their children.

Enersen (1993) found that gifted students had important needs that were overlooked in their home schools and peer environments, and that summer residential programs met many of these academic, psychological, social and academic needs. Some of the academic needs of the students that were cited in the study were: (1) the need for

an advanced, accelerated, and challenging curriculum; (2) the need for an environment where students can discuss and debate ideas and issues with same ability peers; (3) the need for teachers who are professionals and experts in their field; and (4) the need for an environment where they can learn new career opportunities that they never knew existed before attending the program (p. 172-173). Enersen (1993) also identified some of the socioemotional needs that are addressed by summer residential programs: (1) peers who really understand them, (2) a place where they do not have to be afraid to stand out, (3) a place were they feel that they are not alone, (4) a place that builds self-confidence and where they can get validation.

Enersen's (1993) study has several strong points as well as several limitations. The strengths of Enersen's (1993) study are: (1) it offers insights of the academic and socioemotional effects of attending residential school programs as told by the gifted students and their parents; (2) the participants of the study have been attending the summer residential program for at least three years giving them the time to fully comprehend and evaluate the what the program's values are to them; (3) the study also considered what the parents think about the program with regards to its effects on their children, and by doing this, the responses of the participants were also in a way validated; and (4) the researcher conducted the interviews with an open-ended format giving the students and their parents the freedom to respond and elaborate on their responses. Some limitations of the study are: (1) the results of the study may not be generalized as representative of the majority of the gifted population due to the small sample size involved; and (2) the data collected in the study may have been skewed by participants who may be responding to the questions for the benefit of the researcher.

Effects of Residential Schools on Gifted Students' Social and Emotional Development

Several studies were included in this strand of the literature review on the effects of residential school programs on gifted students' socioemotional development. The studies that were included are: Coleman's (2001) ethnographic and phenomenological inquiry of the social life of gifted students in a public residential school; Cross, Adams, Dixon, and Holland's (2004) longitudinal study on the psychological characteristics of gifted students attending a residential school for the gifted; Cross, Cassady, and Miller's (2006) study on the suicide ideation and personality characteristics among adolescents enrolled in a residential high school for the gifted; Dixon, Cross, and Adams (2001) cluster analysis of the psychological characteristics of academically gifted students in a residential setting; Dixon, Lapsley, and Hanchon's (2004) cluster analysis on the empirical typology of perfectionism in gifted students enrolled in a residential academy; Speirs Neumeister, Williams, and Cross's (2007) qualitative investigation on the effects of residential schools on the gifted students who demonstrate high levels of perfectionism; and Jin and Moon's (2006) study on the well-being and school satisfaction among academically talented students attending a residential science high school.

Several broad topics relating to the socioemotional aspects of a gifted child's development are covered by the studies in this section of the review. Coleman's (2001) ethnographic study made inquiries on the social life of gifted students in a residential school. Studies by Cross, Adams, Dixon, and Holland (2004), Cross, Cassady, and Miller (2006), and Dixon, Cross, and Adams (2001) all focused on the psychological types and characteristics of gifted students in residential schools. Although the focus of these studies were the same, the way they applied it in the context of residential schools

for the gifted were very different. The studies by Dixon, Lapsley, and Hanchon (2004), and Speirs Neumeister, Williams, and Cross (2007) investigated perfectionism in gifted students attending residential school. Jin and Moon (2006) focused on the well-being and school satisfaction of gifted students attending a residential school.

Coleman (2001) conducted an ethnographic study on the social life of gifted students in a public academic year residential school. He focused his research in observing the "social systems" or interrelationships among the students that were formed as a result of their "academic life, their residential life, and the overall school environment (which includes the school administration, and the policies and rules governing the students' lives)"(p168). Coleman conducted his study for a period of one academic year orientation to graduation. Within that timeframe he attended classes, lived in the dorm, followed students with their permission, interviewed and conversed with 89 junior and senior high school students, and had hour-long interviews with 8 students four times and with a group of 13 students one time. In addition to these he also constructed a questionnaire for the students and for faculty in order to verify his observations and informal conversations.

In his study, Coleman (2001) identified six terms that characterize the social system in the residential school: "*openness, fluidity, acceptance, busy, pressure*, and *shock and amazement*" (p.169). According to Coleman (2001): openness refers to the diverse ideas that are present in school environment; fluidity refers permeability of the groups in the school; acceptance refers to the tolerance for different kinds of behavior; busy means deadlines for homework, coursework, and different sorts of activities are always present; pressure means that the demands of the fast-paced environment in the

school is always amplified by self and academic requirements; and shock and amazement refers to the students' reactions when they encounter diversity, rules, and rigorous academic requirements.

Coleman's (2001) study on the social life of gifted students in a residential school had several strengths that give credibility to his findings. First, the author actually observed and experienced the findings of the study as compared to other studies that may only rely on what the respondents tell the researchers. Second, Coleman also gave questionnaires to participants as well as the faculty, as a way of validating his observations and experiences; and also, as a way of offsetting the possible biased reactions of the participants in the presence of known observer/researcher. There are also some weaknesses to his study. The findings of his research may be hard to apply to the general population of gifted students attending a residential school program due to the small sample size used in the study. In addition to this, although Coleman conducted questionnaires to validate his observations/experiences, there is still a possibility that the findings of the study may be skewed by the way he interpreted these observations/experiences.

While Coleman (2001) focused on the characteristics of the unique social system present in residential schools, the following group of researchers focused on the psychological characteristics of gifted students attending a residential school. Cross, Adams, Dixon, and Holland's (2004) purpose for their longitudinal study was to observe the psychological characteristics of gifted students attending an academic year residential school program and determine whether or not these characteristics would change as they attended the program. The Minnesota Multiphasic Personality Inventory Adolescent

version (MMPI-A; Butcher, et al., 1992) was used to examine the psychological characteristics of the study participants. The MMPI-A (Butcher, et al 1992) is a widely used instrument that can indicate the likelihood that a respondent is exhibiting particular behaviors (that are covered by the instrument) or experiencing emotional difficulties. It can be used for adolescents 14 to 18 years of age. It has 478 items, 350 of which address 10 Clinical scales and the rest covers the Harris-Lingoes and other Supplementary subscales. The 10 Clinical scales in this instrument are: Depression (D), Hysteria (Hy), Psychopathic Deviate (Pd), Paranoia (P), Hypomania (Ma), Psychasthenia (Pt), Masculinity-Femininity (Mf), Hypochondrias (Hs), and Social Introversion (Si). The Harris-Lingoes subscales are used to understand better the nature of the first five Clinical scales. The MMPI-A (Butcher, et al, 1992) uses a *t*-score system with an average score of 50 and a standard deviation of 10. In this instrument, scores that fall in the 60-64 ranges signify moderate elevations and scores that are 65 and over indicate significant elevations.

The study involved administering the MMPI-A in two separate occasions, once at the beginning of the students' first year in the residential school (pretest) and once at the end of their second year (posttest). The initial sample for this study was 272 students, but due to the optional nature of participation, a total of only 139 students completed the second test. Of the 133 students who did not complete the second test, 72 left the program for a variety of reasons (financial, health-related, academic, social). In this study, Cross, Adams Dixon, and Holland (2004) compared the MMPI-A pretest results of the participants with the results of a normative group to determine if the students who entered the gifted program differ from same age range students. The researchers also

compared the MMPI-A (Butcher et al, 1992) Clinical scales results of the participants who stayed with the program with those who dropped out of the program determine what psychological characteristics may have caused their leaving the program. In addition to this, they also monitored the scores of some participants with elevated (65 or higher) MMPI-A clinical scales; and examined how well they adjusted over the course of the two-year program by comparing their pretest scores with their posttest scores.

Results of the study showed that the participants' average pretest scores were somewhat similar to the results of the normative sample, demonstrating that the students who entered the gifted program as a group did not differ from same age range peers in terms of their MMPI-A results. Additional findings of the study were that students who dropped out of the program scored higher on both the Hysteria and Hypomania scales than those students who stayed; and that a majority of the participants with elevated MMPI-A clinical scales scores tended to decrease in their scores on the posttest. The overall finding of the study shows that there are no significant changes on the participants' psychological characteristics over the period of their two-year stay in the program.

Cross, Adams, Dixon, and Holland's (2004) study has several strengths. One of the strengths of the study is that it is a longitudinal study. The researchers gathered data at different points in the study over a two-year period making the results more credible than in other studies where the data is collected only once. Another strength of the study is that it not only offers insights on the psychological characteristics of the participants who completed the study and stayed in the residential program but also some insights on those who left the study and the program.

Another study on the psychological characteristics of gifted students attending a residential school was conducted by Cross, Cassady, and Miller (2006). In this study, the researchers examined the relationship between the psychological personality types and suicide ideation among students attending a 2-year public residential high school program for the gifted. The study involved the administration of two instruments -- the Suicide Ideation Questionnaire (SIQ; Reynolds, 1987) and the Myers-Briggs Type Indicator (MBTI; Myers, 1962) to determine the level of suicide ideation and the psychological personality types at the beginning of the academic year of 152 gifted students in the 11th grade attending a residential program. The SIQ (Reynolds, 1987) is a 30-item measure that can be used to assess the current level of suicide ideation among 13 to 19 year old adolescents. This instrument uses a 7-point-Likert-type scale – with responses ranging from 0 (*never had the thought*) to 6 (*almost every day*), that assesses how often cognitions associated with suicide ideation happened within the previous month. The MBTI (Myers, 1962) is a self-reporting measure of psychological and personality types. It explores the psychological type of a person based on the four dimensions of personality, which are: *extraversion (E) or introversion (I), sensing (S) or intuition (N), thinking (T) or feeling (F),* and *judgment (J) or perception (P).*

Cross, Cassady, and Miller (2006) compared the participants' result in the SIQ with the results normative sample of 2,000 adolescents provided by Reynolds (1987). In addition to this, the researchers also used the results of Hawkins' (1998) analysis on the psychological types of gifted adolescents attending the Mississippi School for Mathematics and Science (MSMS) as a comparison sample for the MBTI results of the participants.

The findings of the Cross, Cassady, and Miller (2006) study showed that the participating gifted students' suicide ideation rates did not differ to those of the normative sample. In other words, gifted students attending the residential program did not experience increased rates of suicidal thoughts and behaviors as compared to their non-gifted counterparts. However, when they compared suicide ideation rates within the group, they identified the presence of gender-specific effects. Cross, Cassady, and Miller (2006) found out that gifted female students experienced higher rates of suicidal thoughts and behaviors than their male counterparts. In addition to this, they indicated that in relation to the psychological types, gifted females with introversion-perceiving (IP) personality types had a greater chance of experiencing suicidal thoughts and behaviors than those with other personality types. The study also showed that the participants' MBTI results were similar to the general trends of Hawkins' (1998) analysis of the psychological type of gifted students attending a residential high school. An analysis of the relationship between the participants' MBTI and SIQ results showed that (1) students with Perceiving (P) personality types had higher levels of suicide ideation as compared to students with Judging (J) personality types; and that (2) the gender of the students, and a combination of judging/perceiving (J/P) and introversion/extroversion (I/E) personality types can reliably predict approximately 18% of the variance in suicide ideation.

This study by Cross, Cassady, and Miller (2006) has some strengths and weaknesses. A strength of the study is that it involved the whole population of students who will be attending the residential program for that academic year (because the SIQ and the MBTI was conducted as a part of the standard battery of test required by the at the beginning of the program) making the results more generalizable to the larger

population of gifted students in the state since the student population of the school reflects "the state's diversity in race, ethnicity, socioeconomic level, and sexual orientation" (p.301). Another strong point of this study is that it compared the results of the personality types of gifted students with the results of a previous study by Hawkins (1998) and found similar findings, giving validation to the study results. A weakness of the study is that it researchers did not conduct any posttest making the results applicable only to the disposition of the students before attending the residential program, and making it hard to make conclusions on the possible effects of the residential school setting on the students' personality characteristics and level of suicide ideation.

Dixon, Cross, and Adams' (2001) study involved a cluster analysis of the psychological characteristics of students in an academic year residential high school for students who are gifted in science, mathematics, and the humanities . Their purpose for the study was to determine the characteristics of gifted students who choose to leave home to attend a residential school for academic purposes. 156 gifted students entering a residential high school as juniors participated in the study, 74 were males and 82 were females. The participants responded to three instruments: (1) the Self-Description Questionnaire III (SDQIII; Marsh, 1988), (2) the Minnesota Multiphasic Personality Inventory for Adolescents (MMPI-A; Butcher et al., 1992), and (3) the Self Perception Profile for Adolescents (SPPA; Harter, 1988), that were given at the start of the academic year.

The Self-Description Questionnaire III (SDQIII; Marsh, 1988) is a self-report instrument that uses an 8-point scale – with responses ranging from 1 (*Definitely False*) to 8 (*Definitely True*) to measure the self-concept of late adolescents with ages ranging

from 16 to adult. The instrument has 136 items that are divided among the 13 subscales focusing in three broad domains: *global, academic, and non-academic*. The *global* domain covers two subscales, one focusing on total self-concept and another focusing on general self-concept; the *academic* domain covers three subscales, one for mathematics self-concept, one for verbal self-concept, and another for general academic self-concept; and the *non-academic* domain covers eight subscales focusing on problem solving, physical and/or athletic ability, physical appearance, same-sex and/or opposite sex relations, parent relations, spiritual/religious values, honesty/trustworthiness, and emotional stability. The Minnesota Multiphasic Personality Inventory for Adolescents (MMPI-A; Butcher et al., 1992), as discussed earlier in this review, is an instrument that can indicate the likelihood that a respondent is exhibiting particular behaviors or experiencing emotional difficulties. In this study by Dixon, Cross, and Adams (2001), the MMPI-A was used to provide the psychological types/backgrounds of the students that fall under the different clusters identified by the researchers, and to determine if there are any variations in the psychological types/characteristics of the students within each cluster. The Self Perception Profile for Adolescents (SPPA; Harter, 1988) is an instrument used to measure the respondent's perceived competence in the different domains of self-concept and Global Self-Worth. The SPPA consists of 45 statements focusing on the domains of Scholastic Competence, Social Acceptance, Physical Appearance, Job Competence, Romantic Appeal, Behavioral Conduct, Close Friendships, and Global Self-Worth; and has an additional 16 statements rating the importance of these domains to the respondent. Each item on the SPPA uses a scale of 1 to 4 – with 1

indicating low perceived competence and 4 indicating high perceived competence, to characterize the respondent's selections.

In this study, the researchers used the Ward's cluster analysis (Ward, 1963) to reduce the data by classifying the students (based on their SDQIII results) into subgroups comprised of similar attributes. After determining the cluster membership of the participants, a multivariate analysis of variance (MANOVA) was used on the MMPI-A results to determine if the students in each cluster vary in their psychological types/characteristics. Dixon, Cross, and Adams (2001) also conducted a MANOVA on the results of the SPPA to further validate the cluster membership of the participants and provide further information on the characteristics of each cluster. In addition to the analyses of the results of these three instruments, the researchers also did a brief comparison of their results with the results of a previous cluster analysis by Manor-Bullock, Dixon, and Dixon (1993) on the self-concepts of gifted adolescents.

Dixon, Cross, and Adams (2001) identified six clusters within the group of students participating in the study, they are: (1) the Math Superstars (n=30), (2) the Socially Focused Students (n=25), (3) the Non-Athletes (n=30), (4) the Low Overall (n=22), (5) the Verbal Superstars (n=13), and (6) the Non-Spirituals (n=20). According to the researchers, each cluster has different profiles based on the results of the SDQIII, MMPI-A, and SPPA. The students who were classified as *Math Superstars* did not score low on any area of the SDQIII, did not have any psychological abnormalities based on their MMPI-A result, and had high math self-concepts, high spiritual values, high academic standards, and strong feelings of social acceptance as evidenced by their SDQIII and SPPA results. The *Socially Focused Students* were characterized by students

with high confidence in the physical abilities and students who value their relationships with the opposite sex based on the SPPA results; these are also students to are not spiritually minded as shown on their SDQIII results; and like the Math Superstars they also do not display any psychological abnormalities in their MMPI-A results. The *Non-athletes* have a very low self-concept regarding their physical ability, low emotional stability score, and see themselves as more proficient in verbal areas than in math areas based on the SDQIII and SPPA; they also displayed the highest level of social introversion on the MMPI-A as compared to students in the other clusters. The *Low-Overall* students displayed the lowest self-concept scores across all of the scales; based on the SDQIII and SPPA results, they had low self-esteem, low scholastic self-concept, low perceptions of problem-solving skills, low physical appearance self-concept, low general self-worth, and the lowest emotional stability scores. In addition to these, the Low-Overall cluster also had the highest score on the Depression subscale in the MMPI-A as compared to other clusters. The *Verbal Superstars* had high verbal self-concepts, high self-esteem, high physical appearance self-concept, high self-worth with regards to relationships with the opposite sex, but low perceived confidence in their physical abilities based on their SDQIII and SPPA results; in addition to this, they also have the lowest score on the Depression scale in the MMPI-A. The *Non-Spiritual* cluster was characterized by very low scores on the spiritual/religious subscale of the SDQIII, and low self-concept on their physical ability. On the other hand, the students under this cluster had healthy academic self-concepts and self-esteem based on their SPPA results; Their MMPI-A results also did not display any abnormalities in psychological types/characteristics. In addition to these findings, the researchers also found out that

some of the clusters that they have identified are similar to those identified by Manor-Bullock, Dixon, and Dixon (1993). In the Manor-Bullock, Dixon, and Dixon (1993) study five clusters were identified, they are: (1) Low Self-Concept, (2) Stereotypical Gifted Students, (3) Superstars, (4) Nonreligious/Spiritual, and (5) Poor Physical Ability. The Low Self-Concept cluster is similar to the Low-overall cluster identified by the researchers. Another similarity of the two studies is the presence of Poor Physical Ability and Non-Athletic clusters, and Nonreligious/Spiritual and Non-Spiritual clusters.

The study by Dixon, Cross, and Adams (2001) has several strong points as well as limitations. One of the strong points of the study is the method employed by the researchers in conducting the study. The researchers used Ward's cluster analysis on the SDQIII results of the participants to group them into clusters and also administered MMPI-A and the SPPA to confirm and validate the resulting clusters. In addition to this, the results of this study was also compared to the results of a previous study by Manor-Bullock, Dixon, and Dixon (1993), and yielded somewhat similar results. One weakness of the study is that the clusters used by Dixon, Cross, and Adams (2001) may not be readily applicable to gifted populations in other residential schools because the clusters are dependent on the particular group of samples involved in this study.

Another study that utilized the cluster analysis method was conducted by Dixon, Lapsley, and Hanchon (2004). The purpose of the cluster analysis conducted by Dixon, Lapsley, and Hanchon (2004) was to determine the types of perfectionism in gifted students attending a public academic year residential high school program for science, mathematics and humanities; and examine the relationship of these types of perfectionism to indices of psychiatric symptomatology, adjustment, self-esteem, and

coping. The study involved 142 junior high school students (51 males and 91 females) attending a residential school for the gifted. The average age for the sample is 15.97. The researchers conducted the Multidimensional Perfectionism Scale (MPS; Frost, Marten, Lahart, & Rosenblate, 1990) to assess the participants' perfectionism; the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1987) and the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) to assess psychological symptomatology; two subscales from the Self-Image Questionnaire for Young Adolescents (SIQYA; Peterson, Schulenberg, Abramowitz, Offer, and Jarcho, 1984) to examine the participants' positive adjustment; two subscales from the Self-Esteem Index (SEI; Brown & Alexander, 1991) to assess the participants' self-esteem; and the Coping Inventory (COPE; Carver, Scheier, & Weintraub, 1989) to assess the coping strategies of preferred by the participants'.

The Multidimensional Perfectionism Scale (MPS; Frost, Marten, Lahart, & Rosenblate, 1990) is a 35-item instrument used to assess perfectionism. Each item in the instrument uses a 5-point Likert-type scale with responses ranging from agree strongly to disagree strongly. The instrument has six subscales, they are: (1) Concern Over Mistakes, (2) Personal Standards, (3) Parental Expectations, (4) Parental Criticism, (5) Doubts About Actions, and (6) Organization. Scores are reported by total score for perfectionism and subscale scores. Strong validity coefficients and adequate internal consistency ranging from .78 to .92 has been reported for the MPS (Frost, Marten, Lahart, & Rosenblate, 1990). The Reynolds Adolescent Depression Scale (RADS; Reynolds, 1987) is a 30-item instrument used in assessing depressive symptoms in teens with ages ranging from 13 to 18. Each item uses a four-point response format where the

respondents are asked to answer whether a symptom occurs *almost never, hardly ever, sometimes,* or *most of the time*. The RADS (Reynolds, 1987) is reported to have strong validity coefficients for different measures of depression and internal consistency ranging from .91 to .94. The Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) is also a measure of depressive symptomatology. The instrument lists 58 symptoms wherein the respondents will report the extent to which they have experience each symptom by choosing from a four-point scale with responses ranging from *not at all* to *extremely*. The items/symptoms in the HSCL (Derogatis et al., 1974) is divided into five subscales, they are: (1) Depression, (2) Obsession-Compulsion, (3) Somatization, (4) Interpersonal Sensitivity, and (5) Anxiety. The Self-Image Questionnaire for Young Adolescents (SIQYA; Peterson, Schulenberg, Abramowitz, Offer, and Jarcho, 1984) is a 98-item questionnaire designed to measure the self-image of young adolescents. This instrument has nine subscales but for this study, the researchers used only two, the Mastery and Coping subscale, and the Superior Adjustment subscale, to measure Positive Adjustment of the participants. Each subscale has 10 items and each item uses a 6-point Likert-type scale with responses ranging from *describes me very well* to *does not describe me at all*. The Self-Esteem Index (SEI; Brown & Alexander, 1991) is used to measure self-esteem. It has four subscales, each with 20 items. For this study, Dixon, Lapsley, and Hanchon (2004) used only two subscales: the Perception of Academic Competence subscale, which measures the respondent's self-esteem in the academic and intellectual areas; and the Perception of Personal Security subscale, which measures the respondent's perception of his/her physical and psychological well-being. The Coping Inventory (COPE; Carver, Scheier, & Weintraub, 1989) measures the

preferred coping strategy of students. The instrument requires the participants to indicate on a four-point scale how often they use each of the 53 coping strategies whenever they are in stressful situations. The coping strategies listed on the instrument can be grouped into three categories: problem-focused coping strategies, which involve finding the source of stress or problem and solving it; emotion-focused coping strategies, which involve minimizing and controlling the emotional stress caused by stressful events; and dysfunctional coping strategies, which involve denial of the stressful situation.

In this study, the researchers determined the types of perfectionism exhibited by the participants by conducting a cluster analysis on the participants MPS (Frost, Marten, Lahart, & Rosenblate, 1990) results. After the clusters where identified, Dixon, Cross, Lapsley, and Hanchon (2004) then examined its relationships with the manifestations of psychiatric symptomatology, adjustment, self-esteem, and coping using the participants' results on the RADS (Reynolds, 1987) and the HSCL (Derogatis, et al., 1974) , the SIQYA (Peterson, Schulenberg, Abramowitz, Offer, and Jarcho, 1984), the SEI (Brown & Alexander, 1991), and the COPE (Carver, Scheier, & Weintraub, 1989) respectively. The researchers also compared the results of their study with the results of previous studies by Parker (1997), Parker & Mills (1996), and Parker & Stumpf (1995).

The cluster analysis conducted by Dixon, Lapsley, and Hanchon (2004) identified four clusters: (1) the Mixed-Adaptive Perfectionism (n=51), (2) the Mixed-Maladaptive Perfectionism (n=20), (3) the Pervasive Perfectionism (n=30), and (4) the Self-Assured Nonperfectionist (n=39). Students who are in the Mixed-Adaptive cluster have few doubts about their ability to complete tasks, sets high standards, but do not respond negatively to mistakes. Those who are under the Mixed-Maladaptive cluster have strong

doubts about their capabilities, do not set high standards, and respond negatively to mistakes. Students who fall under the Pervasive Perfectionism cluster are like those in the Mixed-Maladaptive group differing only in the high standards that they set for themselves. The Nonperfectionist group are confident in their ability to complete tasks but does not set high personal standards. Of the four clusters, the Pervasive and Mixed-Maladaptive clusters illustrated negative findings with regards to mental health, adjustment, and coping. In addition to this, the students with Mixed-Adaptive perfectionism reported greater academic competence and superior adjustment than the Nonperfectionists. The researchers also reported that the findings of their cluster analysis were in concurrence with the results of previous studies by Parker (1997), Parker & Mills (1996), and Parker & Stumpf (1995). In the previous studies done by Parker and colleagues (1997, 1996, 1995) on elementary students, three cluster groups were identified – (1) the Healthy perfectionist group, (2) the Dysfunctional perfectionist group, and (3) the Nonperfectionist group. These clusters were similar in characteristics with the Dixon, Lapsley, and Hanchon's (2004) Mixed-Adaptive Perfectionist, Pervasive Perfectionist, and Nonperfectionist clusters respectively. The researchers' identification of another group, the Mixed Maladaptive Perfectionists, was the only difference with the Parker studies.

The Dixon, Lapsley, and Hanchon (2004) study has several strengths. One of them is the battery of tests employed in the study. The researchers used several instruments to confirm and validate the results of this study. Another strength of the study is that the resulting clusters of perfectionism in this study were compared with the

results of previous studies (Parker, 1997; Parker & Mills, 1996; Parker & Stumpf, 1995) and yielded fairly similar outcomes, thus, validating the results.

Another study on the perfectionist behaviors exhibited by gifted students in a residential setting was conducted by Speirs Neumeister, Williams, and Cross (2007). They investigated the effects of the rigorous academic environment in residential schools for the gifted on the gifted students who demonstrate high levels of perfectionism. Since this study is aimed only for gifted students who display high levels of perfectionism, the researchers had to isolate a sample from the whole population of gifted students attending the residential school. In order to do this, the researcher chose to conduct criterion sampling. Criterion sampling is a type of purposeful sampling that involves selecting cases/samples that meet some predetermined criteria that are necessary in order to conduct the research; the researcher usually sets the criteria. In this case, the criteria set by Speirs Neumeister, Williams, and Cross (2007) are: (1) the student must be gifted – giftedness, in this study, was defined by the admission to the residential school; and (2) the student must have perfectionist tendencies – perfectionist tendencies was defined as having a high score on at least one of the subscales of the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991). The Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) is a 45-item instrument designed to assess the perfectionist tendencies of a student/individual. The MPS (Hewitt & Flett, 1991) is divided into three subscales: the Self-Oriented Perfectionism subscale, which measures how high the individuals set expectations on themselves; the Socially Prescribed perfectionism subscale, which measures the "extent to which individuals perceive others as having high expectations for their performance"(Speirs Neumeister, Williams, &

Cross, 2007, p. 13); and the Other-Oriented Perfectionism subscale, which measures how high the individuals set expectations on others. Each subscale contains 15 items on a 7-point Likert-type scale. The internal consistency and test-retest reliability (3-month span) for each subscale is reported at .86 and .88, respectively, for the Self-Oriented subscale, .82 and .75 for the Socially Prescribed subscale, and .87 and .85 for the Other-Oriented subscale.

The researchers conducted criterion sampling by administering the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) to 293 junior and senior high school students attending a public, academic year residential school for the gifted. Students whose MPS scores were one standard deviation higher than the group mean scores for at least one of the subscales were recruited for the study; due to the voluntary nature of the study, the final sample count came down to 15 students. The 15 participants were then interviewed. The researchers used a semi-structured interview format to collect data from the participants. The interview utilized open-ended questions designed to probe the participants' experiences on perfectionism, and to encourage participants to elaborate on those experiences. Some of the interview questions used in this study were: "(1) think of the time when you were aware of being a perfectionist and tell me about it in as much detail as possible; (2) how do you think your perfectionists tendencies evolved; (3) tell me about the standards you have for your own performance; (4) tell me about the standards you fell others have for your performance; (5) how has the academy influenced your perfectionism; (6) how has the residential environment influence your perfectionism, (7) how have you responded to the level of challenge at the academy; and (8) think of the time you did not meet someone's expectations (or your

own) and tell me about it in as much detail as possible" (p. 17). After the interview responses were collected, the participants where contacted via electronic mail to validate/clarify the data.

The study by Speirs Neumeister, Williams, and Cross (2007) identified three types of effects of the residential school environment on the students' perfectionism: (1) increase in perfectionism, (2) decrease in perfectionism, and a (3) curvilinear reaction of an increase followed by a decrease. Increase in perfectionism is brought about by the students' desire to match their peers' performance in class, and replicate their peers' perfectionist behaviors. Self-oriented perfectionists exhibited the curvilinear perfectionist behavior. These students reported that they were historically perfectionists, and their initial response upon entering the school was to increase their perfectionist behavior because of the environment with other high achievers. But during the course of the program they discovered that others were experiencing difficulty as well, so once they have achieved their personal best they did not try harder, thus the decrease in perfectionism. The decrease in perfectionist behavior was reportedly a result of the homogeneous grouping and the challenging coursework associated with the residential school environment, and the structure of the school that discouraged competition by getting rid of class rankings, and the residential setting.

The major strength of this study is that it gives the reader insights of the effects of rigorous academic environments found in residential gifted schools on the perfectionism of gifted students. Another strong point of the study is the researchers' use of in-depth, semi-structured interviews as data collection tools because it allows the student to explain and elaborate on their answers. Another strength of the study is that it confirmed the data

collected by sending a copy of the transcripts back to the participants for clarification and validation. One limitation of the study is the small sample size employed. Although the results of the study offer some insights on perfectionism in residential gifted schools, the small sample size makes it hard for other researchers to make any generalizations about the perfectionism of gifted students in residential gifted schools as a whole. Due to the small sample size, responses from participants who are answering for the benefit of the interviewer may easily affect the outcome of the study. Another limitation of the study is the criteria used in selecting the samples. One of the criteria used by the researchers - giftedness by virtue of being accepted in the residential program, makes the results of the study applicable only to the residential school where it was conducted since different residential programs have different sets of criteria for accepting gifted students into the program.

The study by Jin and Moon (2006) examined whether or not gifted students attending a residential school program had different levels of psychological well-being and school life satisfaction than their high ability peers attending regular high schools. The study involved 299 gifted high school students in Korea, 111 are attending an academic year residential high school for science and 188 are attending a regular high school. The researchers reported that the student sample from the regular high school have the same GPAs as the sample from the residential school; and where selected using the qualification standards for entry in the science high school in order to assure that both samples are similar in composition with regards to academic achievement. Both groups of students responded to the Psychological Well-Being Scales (PWB Scales; Ryff, 1989), a researcher-constructed Satisfaction with School Life Scale. The Psychological Well-

Being Scales (PWB Scales; Ryff, 1989) is an instrument used to measure the psychological well-being of an individual. The PWB Scales (Ryff, 1989) consists of six subscales with 14-items each, they are: (1) Autonomy, (2) Environmental Mastery, (3) Personal Growth, (4) Positive Relations with Others, (5) Purpose in Life, and (6) Self-Acceptance. The PWB Scales (Ryff, 1989) are reported to have high internal consistency ranging from 0.86 to 0.93, and high test-retest reliability ranging from 0.81 to 0.88. Since the study was conducted in Korea, the researchers used the Korean version of the PWB Scales that was developed in a prior study (Ryff et al., 1993). The researchers reported that the Korean version of the PWB Scales was evaluated by five bilingual speakers of Korean and English, and pilot interviews were also conducted with Korean respondents. The researcher constructed Satisfaction with School Life Scales was designed to measure the respondents' level of satisfaction with their school life. The 12-item instrument focused on three dimensions of school life identified by the researchers, they are (1) Curriculum, (2) Teachers, and (3) Peer Relationships. Each item on the questionnaire uses a 6-point Likert-type scale with responses ranging from *strongly disagree* to *strongly agree.*

Jin and Moon (2006) reported that there were no significant differences between the well-being of the students attending the residential high school and the students attending the regular high school. On the other hand, gifted students attending the residential high school had higher school life satisfaction than their peers in the regular school.

There are some strengths as well as limitations to this study by Jin and Moon (2006). One of the strong points is the researchers' comparison between gifted students

in a residential setting and gifted students in a non-residential setting. Another strong point of the study is that it offers some insights on the effects of residential schools on the school life satisfaction of gifted students from another country. One weakness of the study is its use of a translated version of the Psychological Well-Being (PWB) scale. Although the researchers reported that the Korean version of the PWB scales have been reviewed and evaluated by five bilingual Korean and English speakers, and pilot tested it may still not have been as reliable as the original version. Another weakness of the study is it may be hard to generalize the results of this study to other gifted students in other countries due the differences in gifted identification procedures, culture, and educational environment.

Gender-specific Effects of Residential Schools for the Gifted

This strand of the literature review on the gender-specific effects of residential schools for the gifted includes four studies. The first two studies discussed were conducted by Cornell, Callahan, Loyd (1991a, 1991b); the first one investigated the predictors of socioemotional adjustment of gifted females attending a residential school; and the second one examined the personality growth of gifted females in a residential school program. The third study is by Cross, Speirs Neumeister, and Cassady (2007) and it describes the personality and psychological types of a large sample of gifted students attending a residential school. The last study is by Yadusky-Holahan and Holahan (1983), which looks at the effects of academic stress on the anxiety and depression levels of gifted students.

Cornell, Callahan, and Loyd (1991a) conducted a study that investigated whether the socioemotional adjustment of gifted females enrolled in a residential school program

can be predicted by prior personality and family characteristics. There were 44 gifted female high school students enrolled in an early college entrance residential school who participated in this study. The participants ranged in age from 13 to 17 years, and came from middle to upper-middle class families. The participants and their parents were asked to respond to four instruments as predictor measures for this study. Two instruments on family adjustment were mailed to the participant and their parents before the start of the academic year. Upon arrival for the new academic year, the participants were asked to respond to two personality measures. The instruments used for this study were: the Jackson Personality Inventory (JPI; Jackson, 1976), the Self-Perception Profile for Adolescents (SPPA; Harter, 1986), the Parent Adolescent Communication Scale (PACS; Barnes & Olson, 1982), and the Family Environment Scale (FES; Moos & Moos, 1981). The Jackson Personality Inventory (JPI; Jackson, 1976) is a 320-item questionnaire measuring the personality of the respondent. The JPI (Jackson, 1976) has 15 subscales that can be organized in terms of four higher order clusters, the four overarching themes are: (1) Overall Adjustment, (2) Interpersonal Interest, (3) Social Self-Confidence, and (4) Responsibility. The JPI (Jackson, 1976) was standardized on 4,000 college students and was reported to have adequate reliability and criterion-related validity. The Self-Perception Profile for Adolescents (SPPA; Harter, 1986), as discussed earlier, is an instrument used to measure the respondent's perceived competence in the different domains of self-concept and Global Self-Worth. In this study, Cornell, Callahan, and Loyd (1991a) administered only four of the SPPA (Harter, 1986) subscales – the Scholastic Competence subscale, the Social Acceptance subscale, the physical Appearance subscale, and the Athletic Competence subscale. The Parent Adolescent

Communication Scale (PACS; Barnes & Olson, 1982) is a 20-item self-report measure of the adolescents' perception of their relationship with their parents. The PACS (Barnes & Olson, 1982) has two subscales – the Openness subscale and the Problems subscale. Scores can be reported based on the individual scores for each subscale or as a total score of the two subscales. In this study, the researcher used the total score. The Family Environment Scale (FES; Moos & Moos, 1981) is a 90-item self-report instrument that measures the characteristics of the respondent's family environment. The FES (Moos & Moos, 1981) has 10 subscales that can be grouped into three clusters, the clusters with their corresponding subscales are: (1) the Relationship cluster, which includes the Cohesion, Expressiveness, and Conflict subscales; (2) the Personal Growth cluster, which includes the Independence, the Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, and Moral Religious Emphasis subscales; and (3) System Maintenance cluster, which includes the Organization and the Control subscales.

The researchers measured the participants' socioemotional adjustment to the program based on four outcomes: (1) their mental health adjustment, (2) their behavioral adjustment, (3) their peer adjustment, and (4) their satisfaction with the program. The mental health adjustment was measured using the participants' mental health information that were gathered by the school staff. The behavioral adjustment was measured using the daily student observation logs accomplished by the residence hall staff. The peer adjustment was measured using peer sociograms accomplished by the participants. The peer sociograms used by the researchers included a roster and rating technique and a peer nomination procedure. The satisfaction with the program was measured using a

researcher constructed 7-item questionnaire (using a 5-point Likert type scale) asking the participants to rate their satisfaction with the program based on the following areas: the fairness of the program rules, the degree of personal freedom in the program, the quality of help and advice received from program staff, the quality of academic courses offered by the program, satisfaction with the grades received, perception of fitting in the program, and overall happiness with the program.

The researchers evaluated the internal consistency of the outcome measures and identified them as 0.81 for mental health adjustment, 0.78 for the peer adjustment, and 0.82 for the program satisfaction. The researchers then constructed descriptive statistics of all predictor measures and all outcome measures, and conducted one-tailed T-tests to measure the correlation of the two measures.

The findings for this study by Cornell, Callahan, and Loyd (1991a) was that the socioemotional adjustment of female gifted students attending a residential school can be predicted by the students' personal adjustment and family environment as assessed at the beginning of the academic year. The researchers reported that participants' responsibility, interpersonal interest and social self-confidence as measured by the JPI (Jackson, 1976) were predictive of behavioral adjustment, program satisfaction, and peer adjustment, respectively. Furthermore, adolescent self-perception as measure by the SPPA (Harter, 1986) was predictive of the participants' behavioral and peer adjustments. For the family relationship scales, the researchers reported that harmonious family relationships as measured by the FES ((Moos & Moos, 1981) were predictive of the participants' mental health adjustment, and female participants' relationships with their mothers as measured by the PACS were related to their overall mental and behavioral

adjustment. In addition to this, Cornell, Callahan, and Loyd (1991a), further observed that female gifted students with poor self-concepts and who came from troubled families did not fare well in an accelerated, residential school environment.

This second study by Cornell, Callahan, and Loyd (1991b) examined the personality growth of gifted females enrolled in a residential high school, and compared the results with a control group of gifted females enrolled in a traditional high schools. The participants in the study were 33 gifted females (experimental group) enrolled in the residential school and 18 gifted females (control group) enrolled in the traditional high school. Not included in this total were the 10 females (experimental group) who chose not to complete the study, and the 5 females (experimental group) who dropped out of the program. The two groups were given the California Psychological Inventory (CPI; Gough, 1987) at the beginning (pretest) and at the end (posttest) of the academic year. The California Psychological Inventory (CPI; Gough, 1987) is a 462-true/false-item instrument designed to measure the psychological characteristics of the respondent. The CPI (Gough, 1987) reports the personality scores of a respondent using 20 subscales. The internal consistency for the subscales were reported to range from 0.52 to 0.81, and the test-retest reliability (span of one year) for the subscales were reported to range from 0.58 to 0.79.

Cornell, Callahan, and Loyd's (1991b) study showed that the group attending the residential school was quite similar to the group attending the traditional high school at the beginning of the year as evidenced by the significant differences found only in 4 out of the 20 subscales in the CPI (Gough, 1987). However, at the end of the year the group attending the residential school scored higher in the CPI than the group in the traditional

high school. Additionally, the group attending the residential school made significant changes on 14 of the 20 subscales in the CPI (Gough, 1987) indicating positive personality growth in terms of social presence, self-acceptance, independence, empathy, well-being, achievement by independence, intellectual efficiency, psychological mindedness, flexibility, self control, good impression, and femininity.

This study by Cornell, Callahan, and Loyd (1991b) has some strong points. First, the participants of the study were observed for a period of one year. This makes it possible for participants to get used to the residential program, which increases the probability for observing the "real" effects of residential schools in the participants' personality growth. Second, the researchers conducted a pretest and a posttest making it possible track any potential changes in the participants' personality growth. Third, the researchers compared the results of the gifted females in a residential school with a control group of gifted females attending a traditional high school, giving clearer results as to the effects of residential school programs on gifted females. On the other hand, there are also some areas of the study that limited the coverage of the results. First, the researchers did not conduct any test on the participants during the middle of the academic year, which may be a critical period of adjustment for gifted students attending a residential school.

Another study which yielded some gender-specific effects was the study conducted by Cross, Speirs Neumeister, and Cassady (2007). The purpose of the study by Cross, Speirs Neumeister, and Cassady (2007) was to provide a description on the psychological and personality types of a large sample of gifted students attending a residential school program for the gifted. The study involved the administration of the

Myers-Briggs Type Indicator (MBTI; Myers, 1962) to 931 gifted students in a residential high school in order to have an overview of the different psychological and personality types. A breakdown of the participant population show that 56% (n=524) were females and 44% (n=407) were males. In addition to this, 69.9% were Caucasian, 7% were African American, 7.7% were Asian American, 3.2% were Hispanic, 0.2% were Native American, and 9% did not report ethnicity.

The results of the study showed some interesting results with respect to gender. The findings of their study indicates that overall, both genders in the gifted sample have a tendency to lean towards the Intuition (N)/Perception (P) personality types. The study also identified some gender differences within the group with regards to personality types. The researchers observed that male gifted students had a tendency to orient toward introversion (I) while female gifted students orient toward extroversion (E). In addition to this, when the gifted samples results were compared to normative samples, gender-specific results emerged with gifted females orient toward introversion and thinking (I/T) and gifted males orient toward introversion (I).

There are some strengths that give credibility to this study by Cross, Speirs Neumeister, and Cassady (2007). One of them is the very large sample size of 931 students which makes the results more consistent and generalizable than the results of other studies that employ small sample sizes. Another strength of the study is the comparisons of the participants' results with the results of a previous study the personality types of gifted students by Hawkins (1997) which yielded somewhat similar findings, and its comparison with the results from normative samples. A weakness of this study is that the results of this study may not be readily generalizable to the gifted

population. The mere presence of the gifted students in the residential school program already says something about their personalities; the researchers stated that the willingness to live away from home and to attend special academic programs might be more common in some personality types than others. In addition to this, the distribution of the race/ethnicity of the participants (with 69.9% Caucasian) in this study might have also dampened its generalizability to the gifted population due to lack of diversity.

Yadusky-Holahan and Holahan (1983) studied the effects of academic stress upon the anxiety and depression levels of gifted students attending a residential high school. The participants of the study were sixty 12th grade gifted students attending a residential school; 30 students had roommates (19 males and 11 females) and 30 (18 males and 12 females) did not have roommates. They observed the levels of anxiety and depression of four groups of samples (1) gifted males with roommates, (2) gifted males living alone, (3) gifted females with roommates, and (4) gifted females living alone. Three instruments were used in the study: (1) the Depression Adjective Checklists (DACL; Lupin, 1981), (2) the IPAT Anxiety Scale (Krug, Scheier, & Cattell, 1976), and (3) Mooney Problem Checklist (Mooney & Gordon, 1950). The tests were administered three times – two days before the beginning of classes (baseline), two months later, and two days before the finals (except for the Mooney Problem Checklist which was given only once in the second testing).

The Depression Adjective Checklists (DACL; Lupin, 1981) is a self-report instrument used to measure depressive mood. The DACL (Lupin, 1981) consists of seven checklists made up of 32-34 item adjective lists. Four of the seven checklists were designed to target female depressive moods, and three were designed to target male

depressive moods. Based on a normative sample of high school and college respondents, the male mean scores range from 8.02 to 8.78, while the female mean scores ranges from 7.32 to 8.12. The IPAT Anxiety Scale (Krug, Scheier, & Catchell, 1976) is an instrument made up of 40 items designed to measure a respondent's total anxiety level. The Mooney Problem Check List (Mooney & Gordon, 1950) is a 330-item instrument designed to survey a respondent's personal concerns/problems. The instrument has eleven subscales based on different problem categories; each subscale contains thirty items.

The findings of the Yadusky-Holahan and Holahan (1983) study showed that (1) all groups, except for females with roommates, reported significantly higher depression after the second testing, (2) males with roommates and females without roommates reported higher depression after the third testing as compared to the baseline, and (3) all groups, except for males without roommates, reported higher depression after the third testing as compared to the second testing. Moreover, the gifted females living alone experienced the highest amount of anxiety and depression. In addition to these, the Mooney Problem Checklist (Mooney & Gordon, 1950) responses of all the participants reported Home and Family, and Curriculum and Teaching Procedures as the least problematic; and the Social and Recreational Activities, and Health and Physical Development as the most problematic.

One of the strengths of this study is that it conducted a pretest, a middle of the study (semester) test, and a posttest. This is very important because it provides a complete picture of the effects of academic stress on gifted students' anxiety and depression levels at various points of the study. The middle of the study test is especially important because it provides insight on the gifted students in this critical period of

adjustment to the school. Another strength of the study is that it also identifies areas where gifted students may be experiencing the most problems.

Long-Term and Other Effects of Residential Schools for the Gifted

In this literature review, the researcher defines long-term effects as the effects of the residential schools for the gifted on the students' overall development after they have finished attending the residential schools. Three studies were included in this section on the long-term and other effects of residential schools for the gifted. The first study by Lee, Olszewski-Kubilius, Donahue, and Weinholt (2008), discusses the effects of the Civic Leadership Institute (CLI), a service-learning summer residential program aimed at developing awareness of civic issues, increasing motivation to engage in social issues, and understanding diversity, on gifted students. The second study featured in this section was conducted by Lynch (1992), who examined the long-term academic effects of a summer residential science program on gifted students. The third study, by Plucker, Cobb, and Quaglia (1996), examined the aspirations and achievement motivations of gifted students attending a residential magnet school for the gifted.

This study by Lee, Olszewski-Kubilius, Donahue, and Weimholt (2008) examined how gifted students perceive and evaluate their service-learning experiences in a summer residential program for the gifted. The study involved 230 gifted high school students who attended the Civic Leadership Institute (CLI) at the Center for Talent Development (CTD) at Northwestern University or the Center for Talented Youth (CTY) at Johns Hopkins University. The participants responded to the CLI Academic Student Program Evaluation Survey. The format of the surveys differed between the two residential program sites; however, the researchers reported that both surveys were design to measure the

participants' perceptions of the program focusing on their academic experience. In addition to this, the researchers also reported the instrument used in this study contained forced–choice items and open-ended items.

The findings of Lee, Olszewski-Kubilius, Donahue, and Weimholt's (2008) study showed that program participants were very satisfied with their academic experience in the program. More importantly, 80.9% of the participants reported that their interest in service-learning and civic issues increased after participating in the program. 67.6% of the participants also reported the course was challenging for them. In addition to this, 76% of the participants reported that the program "increased their awareness of social issues, and their motivation to get involved with issues in their own communities. The students also identified several skills and ideas that they have gained through participation in the residential program, they are: (1) interest and awareness on social issues, (2) commitment to engage in important social issues, (3) appreciation of the diversity surrounding them, and (4) leadership.

One of the strengths of the study is it shows the feasibility of using residential school programs to deliver services that develop other aspects of a gifted students life like leadership, motivation, and sense of responsibility, which are not typically developed in their home schools. Another strength of the study is the researchers' use of data collection instruments that allow students to explain and elaborate on their responses. On the other hand, one limitation of this study is the use of instruments with different formats for the two different sites where the summer residential program was held, which might make the data gathered somewhat unreliable.

Lynch (1992) examined the academic effects of a fast-paced summer residential science high school program on gifted students' overall performance in science. The study was conducted over a period of six years and involved gifted students, 12 to 16 years of age, who completed a one-year course in high school biology, physics, or chemistry in three weeks at a residential summer program. The students were asked to complete the College Board Achievement Test in Biology (Chemistry or Physics, depending on what subject the student is enrolled in) at the beginning of the program to obtain a baseline score. After finishing the program, the students were asked to complete the College Board Multiple Assessment Programs and Services (MAPS) Achievement Test in Biology (Chemistry or Physics) as a posttest.

Results of the study showed that after attending the fast-paced science residential program, gifted students were able to earn significantly higher scores in their posttest as compared to their pretest. The average pretest score was 473, which falls into the 25th percentile, based on the national norm group of high school students. After finishing the program, the students obtained significantly higher average posttest score of 627, which falls into the 75th percentile of the national norm group of high school students. This increase in the average test score reflects the significant increase in science performance gained by the students who attended the three-week program. Students who attended the science summer program performed also well in subsequent science courses at their regular schools as indicated by follow-up studies on their achievement.

Lynch's (1992) study used data that were collected over a period of six years. This is a strength of the study because it really gives the reader concrete information on the long-term academic effects of special summer residential school programs on gifted

children. Another strength of the study was the use of a pretest and a posttest, which makes it really easy for researchers to track the changes in gifted students' performance. The study also offers a view on the performance of the gifted student after they leave the residential program.

Plucker, Cobb, and Quaglia's (1996) study examined the educational aspirations and perceptions of school climate on gifted students attending the Maine School of Science and Mathematics, a residential school. Ninety-seven 11^{th} and 12^{th} grade students were asked to complete the Grades 6-12 Aspirations Survey (Plucker & Quaglia, 1996). The results of the survey were then compared to archived data from the National Center for Student Aspirations (NCSA) at the University of Maine

Findings from this study showed that students who attended the residential school had high levels of ambition, achievement motivation, and general enjoyment of life. In addition to this, residential school students were reported to have higher levels of aspirations, achievement motivation, and general enjoyment of life as compared to general ability sample.

The results of this study may be skewed because the comparison group data came from general ability students, which may not be comparable to the gifted population used in the study. Furthermore, the researcher did not report the validity and reliability of the instrument used in the study.

Conclusions

Several conclusions were derived based on the findings of the studies conducted on gifted students attending residential schools. Coleman (2002) concluded that most gifted students who will be entering residential high school programs should anticipate

receiving a significant amount of homework and coursework than they are used to. In addition to this, he also concluded that as long as the traditional high schools place few academic demands on gifted students, these students would continue to experience shock as they enter the residential school. Coleman's (2002) statement on the inability of traditional schools to give gifted students challenging curriculum is also reflected in Enersen's (1993) study. Enersen (1993) stated that there is a significant gap between the types/qualities of programs and services that gifted students are receiving in their home schools and the types/qualities of programs and services that they should be receiving. She further concluded that summer residential programs could help bridge this gap.

While the conclusions of the first two studies focused on the discrepancy between regular schools and residential schools, Adams-Byers, Whitsell, and Moon's (2004) conclusion had a different focus. They concluded that regardless of the setting, whether it is in the heterogeneous settings in the regular schools or the homogeneous settings in residential schools, gifted students should be provided with beneficial academic and socioemotional programming that is based on their individual abilities, needs, and preferences. Adams-Byers, Whitsell, and Moon's (2004) study also provides evidence that gifted students are not homogeneous in their preferences and needs.

Dixon, Cross, and Adams' (2001) study provides support to Adams-Byers, Whitsell, and Moon's (2004) assertion that gifted students are not a homogeneous group. Dixon, Cross, and Adams (2001) concluded that gifted students who attend residential school programs share some prominent qualities but differ widely in others. They further concluded that the six clusters of gifted students attending a residential school that they

have identified in their study have many differences; and these differences may be used to understand these students better.

Coleman (2001) concluded that the social system found in special environments like residential schools differ from that found in most regular schools. The researcher added that, because of the uniqueness of these environments, not every gifted student would want to stay in these settings, and determining who will fit in these settings depend on many factors.

One of the factors which may determine the gifted student's adjustment in a residential setting is the psychological type preference. Cross, Speirs Neumeister, and Cassady (2007) concluded that their study validates the results of other existing research on psychological type preferences of gifted students. Furthermore, the researchers stated that the knowledge of the psychological types of gifted students may be used in planning for curriculum that will best provide for the academic and socioemotional needs of these gifted students. The knowledge of the psychological type preference of gifted students may also be used in conjunction with other tests like the SIQ (Reynolds, 1987) to predict the likelihood of some gifted students to engage in suicide ideation. Cross, Cassady, and Miller (2006) performed this in their study, and concluded that gifted adolescents have the same likelihood of engaging in suicide ideation as those adolescents in the general population. However, the researchers also stated that within the group of gifted adolescents, gifted female adolescents, especially those with introversion-perceiving personality types, experience higher levels of suicide ideation than gifted male students.

Another factor which may affect gifted students' adjustment in the residential school is the types and levels of perfectionism exhibited by some of these students.

Dixon, Lapsley, and Hanchon (2004) concluded that the presence of two forms of perfectionism in their study – the Pervasive perfectionism and the Mixed-Maladaptive perfectionism, which may have significant negative effects on gifted students' socioemotional development should prompt educators and school counselors to be on the look out for these types of perfectionism. They further stated that school counselors should not stop at identifying and cultivating the positive aspects of perfectionism in gifted students but also try to address and reduce the existence of maladaptive perfectionism. These conclusions by Dixon, Lapsley, and Hanchon (2004) were also reiterated by Speirs Neumeister, Williams, and Cross (2007) in their study. They concluded that the rigorous academic environment in residential gifted schools may lead to an eventual decrease in perfectionism for many gifted students who exhibit perfectionist behaviors. However, the researchers also stated that educators, school administrators, and school counselors should also carefully monitor these gifted students and look for any negative emotional reactions that may result from such a perceived decline in performance. In addition to this, the researcher also recommended that these students be taught coping strategies and adaptive behaviors that will minimize their perfectionist tendencies and draw their attention back to learning.

The psychological well-being of gifted students in a residential school is also an important factor to consider with regards to their adjustment to that setting. Jin and Moon (2006) examined the psychological well-being of two groups of gifted students, one group attending a residential high school and another group attending a regular high school, and they found no significant differences between the psychological well-being of the two groups. Due to lack of conclusive evidence on the psychological well-being of

gifted students attending residential schools using the Psychological Well-Being Scale (PWB Scale; Ryff, 1989), Jin and Moon (2006) concluded that changes in some socioemotional constructs may take some time to manifest in certain settings like the residential school. In conjunction with this, the researchers recommended that longitudinal studies should be conducted in order to fully comprehend the effects of special environments like the residential school on gifted students' psychological well-being.

Cross, Adams, Dixon, and Holland (2004) concluded that gifted students attending residential schools do not differ psychologically than their non-gifted peers as measured by the MMPI-A. In addition to this, the researchers also stated that the results of their study provides evidence that residential schools do not cause high levels of stress among their gifted students, which is contrary to widespread belief. Furthermore, residential schools seem to have a diminishing effect on some gifted students' elevated scores on the MMPI-A, thus, leading to the conclusion that these schools, while potentially stressful to some gifted students, may actually have positive effects on their psychological well-being.

Cornell, Callahan, and Loyd (1991a) concluded gifted female students in an early college entrance residential program experienced positive personality growth as indicated by their scores in the CPI (Gough, 1987). The researchers stated that this result should assuage some concerns over the potentially adverse effects of attending highly accelerated residential school programs. They also pointed out that although the likelihood of gifted students having adjustment problems in such settings is still possible, it should not be solely attributed to the highly accelerated academic environment; other

factors may also play a role in the students' adjustment like family characteristics. In their second study, Cornell, Callahan, and Loyd (1991b) studied the role of these family characteristics. They concluded that the personality characteristics and family characteristics of gifted students might be used as predictors of socioemotional adjustment of these students in a residential school. The researchers further stated that there is a need to examine the adjustment of the students in a residential setting over time.

The physical environment in residential schools may also play a role in the adjustment of gifted students in such settings. Yadusky-Holahan and Holahan's (1983) study reported that the physical environment in residential schools may increase the level of anxiety and depression in some gifted students. They concluded that residential schools should include in their curriculum an affective education course that will teach gifted students how to recognize stress and depression and ways on how to deal with these problems. In addition to this, the researchers also stated that residential school administrators should carefully plan the physical layout of the school to increase social interaction.

Special residential school programs may also have other beneficial effects on gifted students' development. Lynch (1992) concluded that young gifted students with strong science backgrounds do not need to spend the usual hours of formal instructional time. These students can benefit from the highly accelerated curricula in special summer residential programs for gifted students. The researcher further concluded that if these students were able to master the science content in approximately three weeks in a residential program, then it would be safe to assume that they would do well in the

science courses at their home schools where competition is not as strong and the instructional time is doubled.

Lee, Olszewski-Kubilius, Donahue, and Weimholt (2008) concluded that special residential programs like the Civic Leadership Institute (CLI) can address other aspects of a gifted student's development. Such programs can promote leadership, knowledge of civic issues, civic engagement, and understanding for diversity.

Chapter 3

Summary of Findings

Effects of Residential Schools on Gifted Students' Academic Development. A review of literature on the effects of residential schools on gifted students' academic development yielded generally positive findings and some negative findings. With regards to academic development, majority of the gifted students favor the homogeneous environments found in residential schools programs (Adams-Byers, Whitsell, & Moon, 2004). This finding was supported by Enersen (1993) who stated in her study that residential school environments provide gifted students with the advanced, accelerated, and challenging curricula that they need; give them venues where they can discuss and debate ideas and issues with same ability peers; provide them with teachers who are professionals and experts in their field; and expose them to new career opportunities that they never knew existed.

Coleman's (2002) study observed that gifted students who enroll in residential school programs, especially academic year residential schools, experience shock upon entering. This "shock" is attributed to the rigorous coursework and homework typically associated with residential school programs. This feeling is amplified by the discovery that strong study skills are required in order to meet the demands of the rigorous academic environment. As a result of these, some gifted students tended to favor the flexible heterogeneous settings found outside residential schools where the coursework is easier, enabling them to attain high-class rankings (Adams-Byers, Whitsell, & Moon, 2004).

Effects of Residential Schools on Gifted Students' Social and Emotional Development. Several findings were gathered from the studies that were included in this review of literature on the effects of residential schools on gifted students' socioemotional development. Some studies show that gifted students have mixed feelings on the effects of residential schools on their socioemotional development. Some gifted students consider the unique environment found in residential schools as beneficial to them (Enersen, 1993). They believe that residential schools give them the opportunity to be with same-ability peers who understand them. It also provides them with a place where they do not have to be afraid to stand out, where they feel that they are not alone, where they can build self-confidence, and where they can get validation. On the other hand, some gifted students believe that flexible heterogeneous settings will be more advantageous to them with regards to their socioemotional development (Adams-Byers, Whitsell, & Moon, 2004). These gifted students cited the opportunity to help others and the diversity in flexible heterogeneous groupings as advantages.

Coleman's (2001) study suggested that the unique physical environment of residential schools gives rise to a unique social system. This unique social system, in turn, provides experiences that have significant effects on a gifted student's socioemotional development and adjustment. These social systems are characterized by (1) the diverse ideas that are present in school environment, (2) the permeability of the groups in the school, (3) the tolerance for different kinds of behavior, (4) the deadlines and various activities that are always present, (5) the pace of life that is always amplified by self and academic requirements; and (6) the students' reaction when they encounter diversity, rules, rigorous academic requirements, and the limits of residential life.

Several studies also show that gifted students who enter or attend residential schools have different psychological and personality types and characteristics (Cross, Adams, Dixon, & Holland, 2004; Dixon, Cross, & Adams, 2001). These psychological and personality types and characteristics may determine how students adjust to the residential environment. In addition to personality types and characteristics, family characteristics also affect gifted students' social and emotional adjustment (Cornell, Callahan, & Loyd, 1991a).

The unique social system in residential schools and/or the different personality and psychological types and characteristics of students who attend these schools also affect the type of perfectionism (Dixon, Lapsley, & Hanchon, 2004), the level of perfectionism (Speirs Neumeister, Williams, & Cross, 2007), levels of suicide ideation (Cross, Cassady, & Miller, 2006), and levels of anxiety and depression (Yadusky-Holahan & Holahan, 1983) exhibited by some gifted students.

Gender-Specific Effects of Residential Schools on Gifted Students' Development. The unique environments offered by residential schools have significant effects on gifted students' development. Findings from some studies included in this review of literature reveal some gender-specific effects. Cross, Speirs Neumeister, and Cassady (2007) identified some gender differences within the group of gifted students attending a residential school with regards to personality types. Male gifted students had a tendency to orient toward introversion (I) and thinking (T) while female gifted students orient toward extraversion (E) and feeling (F). Educators can use the results of Cross, Speirs Neumeister, and Cassady's (2007) study to provide these gifted students with the type of instruction that will fit the students' different learning styles associated with each

personality type. The study by Cornell, Callahan, and Loyd (1991b) suggested that female gifted students could experience positive personality growth in a supportive residential school setting. Yadusky-Holahan and Holahan (1983) study shows the importance of peers who can support gifted students, especially gifted female students in times of academic stress and pressure. According to the study, gifted females without peer support groups are most likely to be anxious and depressed during times of academic stress.

Long-Term and Other Effects of Residential Schools on Gifted Students' Development. The results of the studies included in this review of literature suggest that attending special residential school programs have some long-term and other effects on gifted students' development. One study suggests that gifted students attending special service-learning residential programs can develop their leadership skills, their awareness of social issues, and their attitudes toward civic engagement (Lee, Olszewski-Kubilius, Donahue, & Weimholt, 2008). Lynch's (1992) study reports that gifted students attending highly accelerated science residential programs benefited greatly from the experience and performed well in subsequent science courses ate their regular schools. And another study suggests that attending residential programs can have positive effects on gifted students level of aspiration (Plucker, Cobb, & Quaglia, 1996)

Conclusions

The review of literature on residential schools for gifted children led the researcher to several conclusions. These conclusions do not only focus on the subject of residential schools and programs for gifted students, but also on gifted programs in the traditional school setting.

1. *Gifted students may not be receiving coursework that is challenging enough for them in their home schools.*

Some gifted students experience difficulties in adjusting to the academic demands of residential school programs. Coleman's (2002) study reported that gifted students experience "shock" as they enter residential schools due to the heavy homework and coursework associated with these schools. These gifted students where shocked because they were used to the environment in their home schools where they can complete their homework and coursework without exerting much effort and still get high ratings. This reflects that there is a significant gap between the amount/type of coursework that gifted students receive in their home schools and the amount/type of coursework they are subjected to once they enter residential school programs.

2. *Residential school programs can provide the academic needs and the socioemotional needs of gifted students who are ready for such programs.*

Gifted students who are ready and willing to attend residential schools can receive significant academic and socioemotional benefits from such programs. Residential school programs provide gifted students with (1) advanced and challenging curricula, (2) peers who really understand them, (3) teachers who are experts in their field, (4) a venue where they can discuss and debate ideas with same ability peers, (5) a environment where they can get validation and build self-confidence, and (6) a place where they can learn new career opportunities (Adams-Byers, Whitsell, & Moon, 2004; Enersen, 1993; Kollof, 2003).

3. *Flexible heterogeneous grouping such as those found in the traditional classroom setting are as important as homogeneous grouping found in*

residential school programs for some gifted students in terms of addressing their socioemotional needs.

This conclusion is supported by the findings of Adams-Adams-Byers, Whitsell, and Moon's (2004) study, which reported that some gifted students regarded mixed-ability groupings found in the regular school setting as more advantageous to them in terms of their socioemotional needs. These students value the more diverse student population found in these heterogeneous environments because it gives them the chance to interact and help less-advanced peers, and to be with friends who do not attend residential schools. Some gifted students also prefer these settings because they are able to attain high class rankings.

4. *Summer residential programs can address the academic as well as the socioemotional needs of gifted students who prefer heterogeneous group settings.*

Those gifted students who feel that heterogeneous environments are more advantageous to them in terms of their socioemotional needs may receive the most amount of benefit by attending summer residential programs. Summer residential programs for the gifted can deliver more advanced and challenging curricula than gifted programs in the regular school setting (Enersen, 1993), thus addressing the academic needs of these gifted students. Aside from this, these programs only last for a few weeks so these gifted students will have the chance to go back to the heterogeneous environments that they prefer, thus also addressing their socioemotional needs.

5. *Careful considerations should be made when deciding on whether or not to attend residential school programs.*

Several major factors, which may affect the academic and the socioemotional adjustment of gifted students in a residential school (especially academic year programs), should be considered when deciding on whether or not to attend residential school programs. These factors are: the gifted student's readiness for highly accelerated curriculum, their psychological and personality types/characteristics, and the amount of family support that they receive.

6. *Gifted students need to be taught study skills in order for them to survive the academic rigors of residential school programs.*

It is not advisable to assume that gifted students will be able to meet the academic demands of residential school programs just because they were able to do well academically in their home schools. Success in the highly accelerated academic environment in residential schools require gifted students to have the study skills that will allow them to adjust and perform well in such settings. The teaching of these study skills can be done in their home schools or be included as special programs upon their arrival at the residential school.

7. *Family support and commitment is important in determining the student's adjustment and success in the residential school program.*

The gifted student's readiness and willingness to attend residential school programs should not be the only factors to consider when deciding to attend these schools; family support and commitment is as equally important in determining the student's adjustment and success in the program. The gifted student's parents should be aware of the responsibilities and the commitment that will be required from them, in order to support their child who will be living away from them. These responsibilities

include the possibility of traveling long distances to attend school activities that require their presence, regular correspondence with their children (to lessen the possible negative effects of living away from home on their children), and some monetary cost that is associated with their children living away from home (Jones, Fleming, Henderson, & Henderson, 2002).

8. *Special procedures and safeguards should be implemented in residential schools in order identify and help gifted students who may be at-risk in these types of segregated school environments to ensure their success in the program.*

Some gifted students attending residential schools may be more vulnerable to the negative effects of living in segregated environments. In Coleman's (2002) study, he described these students as those who are *defending on the edge.* He suggested that these are the students who have the weakest study skills, are doubtful of their ability to fit academically, and are always feeling the pressure of the school environment. In Cross, Cassady, and Miller's (2006) study these are the female gifted students exhibiting introversion-perceiving (I/P) personality types who may experience higher levels of suicide ideation. In Dixon, Cross, and Adams' (2001) study, these are the gifted students who fall into the *Low-Overall cluster*. These students are characterized by low self-esteem, low academic and physical appearance self-concepts, and low emotional stability; and are therefore more prone to anxiety and depression. These at-risk gifted students who were cited in some of the studies in this literature review should be identified so that proper intervention and help may be given to them to ensure their success in the program.

9. *Counseling programs and services are an integral part of residential schools for gifted children.*

Since most of the gifted students come from schools that may not be able to provide them with the academic training and challenge that they need in preparing for a more rigorous academic environment, academic counseling in the residential school setting should be made available for them. In addition to this, counseling programs and services that target the socioemotional needs of these gifted students should be also in place in order to ensure their proper adjustment and success in the residential program.

Recommendations and/or Implications for Practitioners

The results of this literature review have several implications and applications to the field of gifted education.

Residential school administrators may use the results of the study to identify and assess areas in the residential program that needs improvement in order to accommodate the different needs of gifted students. Residential school administrators should ensure that the following programs/services are present in their schools:

- Programs or workshops on the teaching of study skills to ensure that each student is equipped with the necessary skills to perform well in the residential school;
- A strong counseling program that offers academic and socioemotional support for the gifted students attending the program;
- Include psychological tests as part of the standard battery of tests that are implemented in residential schools as a way to identify and monitor potential students who may be at-risk in such an environment. However, the results of

these tests should not be used in deciding whether or not to admit the student to the program;

- Professional development workshops for teachers and other school staff on the socioemotional needs of gifted students so that they may be able to provide better support for gifted students;
- Programs that encourage students to socialize with other students outside the residential school and other people outside the community;
- Programs that provide the familial support that gifted students need. These programs may include activities that require regular interaction/contact with the students' families.

School administrators and gifted program coordinators in the regular school setting may use the findings of the study in considering the possibility of offering similar programs with a highly advanced and fast-paced curriculum to the gifted student population that they serve. In addition to this, they can also use the results of this study to develop services that teach study skills (like time management skills and advanced reading and writing skills) to gifted students so that they may be equipped with the proper tools and strategies in dealing with the academic demands of the highly accelerated academic environment in residential schools. Local and state school leaders may use the results of this study as a basis for establishing and offering more free/subsidized residential programs for gifted students.

Educators in the field of gifted education may also use the findings of the study to advocate for increased allocation of funding and resources for residential schools, and for the establishment of more residential programs for gifted students. They may also use

the results of the study to identify areas of future research in the subject of residential schools for the gifted. Some areas of future research are:

- Residential schools and gifted underachievement
- Residential schools and overexcitabilities of gifted students
- Residential schools and gifted minority students
- Residential schools and gifted elementary students

Gifted students and their parents, who are frustrated with the type of education and service they (gifted students) are receiving presently, may use the results of this study in considering residential school programs as viable options that can address their academic and socioemotional needs. Some points to consider when deciding whether or not to attend residential school programs:

- The student's readiness and willingness to live away from home and to attend a rigorous academic program should be considered. Coleman (2001) stated that because of the unique environments found in residential schools, not all gifted students might want to attend residential school programs.
- Family support and commitment is another factor to consider. Parents of gifted students who plan on attending residential school programs should expect the possibility of traveling long distances to attend school activities that require their presence. They should also expect to incur some expenses that are associated with their children living away from home, and should make sure that they have regular correspondence with their children (to lessen the possible negative effects of living away from home on their children).

- The type of academic programs that the school offers should match the gifted child's interests, strengths, and needs (Council for Exceptional Children, 2008).
- The faculty members of the residential school should be considered when deciding on whether or not to attend such programs (Kollof, 2005). Some questions to ask are: Do the faculty members specialize in their fields? Do they have advanced degrees? Are they skilled in developing the capabilities of their students?
- The environment of the residential school is also another important factor to consider. According to Seigle and McCoach (2005), the students' perceptions of their environment play an important role on their motivation. Students who perceive their environment as being positive and supportive to their needs are more likely to be motivated than those students who perceive the opposite.
- The availability of extracurricular programs and the types of extracurricular activities present in the school should also be considered (Stamps, 2006).
- The types and the availability of support programs for students who may experience difficulties should also be examined (Stamps, 2006).

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