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**Parents, perceptions, passions, pathways, and patterns:
Exploratory case studies of home education in the development
of intellectually gifted individuals**

Tacey Keller Hopper
William & Mary - School of Education

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**Parents, Perceptions, Passions, Pathways, and Patterns:
Exploratory Case Studies of Home Education
in the Development of Intellectually Gifted Individuals**

-

A Dissertation

Presented to

The Faculty of the School of Education

The College of William and Mary in Virginia

-

In Partial fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

-

by

Tacey Keller Hopper

December 2002

ABSTRACT

This study examined the impact of home education, or homeschooling, on the development process of intellectually gifted individuals. Emerging from the literature review of early familial and educational experiences of eminent individuals, parental involvement, and home education itself, this exploratory, qualitative multiple-case study employed as its conceptual framework the work of Bronfenbrenner (1970) and Coleman and Hoffer (1987), and talent, and Hoover-Dempsey and Sandler's (1995) causal and specific process model of parental involvement. Focusing on the impact of the environmental factors delineated by Gagne of surroundings (both familial and sociological), persons, undertakings, and significant events, four individuals, ages 19-28, completed detailed researcher-designed questionnaires and participated in individual, recorded face-to-face interviews. Focusing on the parental involvement decision, form, mechanisms, and tempering variables delineated by Hoover-Dempsey and Sandler, each of the parents of the four individuals also completed detailed researcher-designed questionnaires and participated in individual, recorded interviews. Analyses within-case yielded emergent themes; analyses across cases yielded potential patterns. Unanticipated findings, issues, intersection of theories, and conclusions were presented.

Parents, Perceptions, Passions, Pathways, Patterns: Exploratory Case Studies in Home Education in the Development of Intellectually Gifted Individuals

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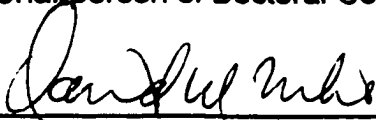
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Tacey Keller Hopper

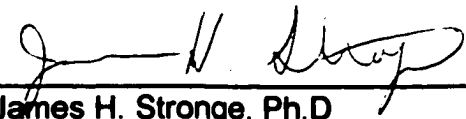
December 2002



**Joyce VanTassel-Baska, Ed.D.
Chairperson of Doctoral Committee**



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CHAPTER ONE

INTRODUCTION

The religion of education in America espouses education as the leveling agent and the pathway to equality (Boorstin, 1974). Thomas Jefferson believed that the objective of education was "to provide an education adapted to the years, the capacity, and the condition of everyone, and directed to their freedom and happiness" and that meeting this objective would "avail the state of those talents which nature has sown so liberally among the poor as the rich, but which perish without use, if not sought for and cultivated" (as cited in National Excellence Report, 1993, p.5).

The juxtaposition of these two ideas captures a sense of the ambivalent attitude in the United States toward the education of intellectually gifted children. This attitude fluctuates between the promotion of the common good and the promotion of individualism, between charges of elitism and the responsible development of individual learners. If a good society is neither one that makes men equal nor one that allows only the best to succeed (Edgar, 1988) but rather one that allows equality of opportunities for optimal individual development, then research and praxis must focus on conditions which foster the actualization of individual developmental potential.

The lack of attention given to individual development and learning in traditional American education has resulted in a quiet crisis in the education of the intellectually gifted as revealed in the National Excellence Report (1993). As the difficulty level of many textbooks has decreased by two grade

levels over the past two decades, it should not be surprising that the majority of intellectually gifted children have already learned up to one-half of the required curriculum of elementary school before such material is introduced in the classroom, thereby creating an undesirable situation for these gifted learners. In the Prisoner of Time report, Kane (1994) reaffirmed Jefferson's belief that intellectually gifted learners deserve a consistently appropriate education yet indicated that, presently, intellectually gifted learners are held prisoners of a school schedule that has remained largely unchanged for over 100 years. Granting that learning occurs in different ways and at different rates in different subjects for individual learners, as the amount of time has been kept relatively constant, the amount of learning has been allowed to vary negatively, with particularly serious implications for gifted learners. Instead of being driven by competency, progress for nearly all learners is universally determined by the calendar, reflecting both the chronological age of the individual learner and the duration of the school year.

VanTassel-Baska (1994) maintained that "gifted and talented students, like all students, have a right to a continuity of educational experience that meets their present and future academic needs" (p. xv). This continuity, or program articulation, is the planned provision of increasingly complex and difficult material in all domains over the traditional K-12 educational span. The hierarchical cohesion of scope and sequence as well as specific learning experiences allows for progressive development (VanTassel-Baska, 1994). However, "educators of the gifted rarely set explicit goals of developing and

sustaining achievement over the life span" (Subotnik & Arnold, 1994, p. 2). Moreover, it is a major assumption, often incorrect, that traditional schools are willing to accept a primary role for developing individual academic potential over a 13-year period (VanTassel-Baska, 1998). Instead of educational continuity, Marshall (1994) described a "profound disconnect" between traditional education based on a century-old model and lifelong learning situated in educational communities that encourage rigorous, complex, self-directed, interdisciplinary, multigenerational, collaborative inquiry.

What are the needs of intellectually gifted children that must be addressed if each child is to be able to develop to his fullest potential? The development of gifted children differs from that of their chronological peers not only in terms of developmental rate, but even more importantly, in kind (Columbus Group, 1991; Horowitz, 1987; Kitano, 1985; Piechowski, 1979, 1991; Silverman, 1993b; Sternberg, 1985). These qualitatively different developmental needs often result in asynchrony, or unevenness, of cognitive, affective, and physical abilities with both internal and external ramifications (Columbus Group, 1991; Terrassier, 1985). This is particularly evident in an intensified responsivity, or overexcitability, to stimuli from physical, imaginal, intellectual, emotional, and sensual sources (Piechowski, 1979; Silverman, 1993b). An intense need to find meaning in self, in interpersonal relationships, and in life is fairly typical of the gifted child (Lovecky, 1993) while an inner tension, called positive disintegration by Dabrowski, results from discrepancies between the ideal world and the actual world (Silverman,

1993b). These particular needs of gifted learners necessitate programming specifically tailored to their individual potential, strengths, and weaknesses (Tannenbaum, 1992) which if unmet or neglected, may result in deleterious effects such as boredom and compliance or anxiety and defiance (Ehrlich, 1989; Kane, 1994).

As early as 1975, Stanley indicated that appropriate education for the gifted could not occur without a combination of special programming and parental involvement. How have parents of gifted learners responded to the needs of their children in the past? In the gifted literature, parental interest and commitment have been identified as potent determinants in the development of giftedness and talent (Albert, 1994; Bloom & Sosniak, 1985; Karnes & D'Illio, 1988; Roedell, Jackson, & Robinson, 1980; Silverman, 1993a). A particularly striking pattern of parental involvement has emerged with respect to education. Abigail Adams, Pearl Buck, Andrew Carnegie, Agatha Christie, Winston Churchill, Thomas Edison, Albert Einstein, General Douglas MacArthur, Margaret Mead, Claude Monet, General George Patton, Theodore Roosevelt, Albert Schweitzer, John Phillips Sousa, and Andrew Wyeth were all taught at home either by a parent or a tutor at some point in their lives (Ballman, 1987; Gordor, 1987; Guterson, 1992). Traditional primary and secondary schooling has been viewed as having minimal positive influence at best or as being a hindrance to development at worst (Bloom & Sosniak, 1985). After deriving a formula for genius and leadership which was comprised of consistent, warm parental responsiveness, relative isolation

from non-familial peers, and parental encouragement of extensive exploration of interests and use of fantasy, McCurdy (1960) concluded that "the public school system is a vast experiment on reducing all three factors to a minimum and should tend to suppress the occurrence of genius" (p. 38).

How is the role of parents with respect to their children's education and socialization generally viewed? Throughout history, the family has been the primary institution for the education and socialization of their children. Commonly, the majority of a child's learning and maturing occurred within the context of the home. In the 1700s, Sir William Blackstone, the greatest legal authority of that century, stated in his famous Commentaries that parents had total authority over their children's education (as cited in Whitehead & Bird, 1984, p. 26). Rousseau suggested that parents exercise their responsibility for cultivating healthy emotional development in their children by prohibiting reading and participation in institutions until the age of twelve, thereby shielding them from the ill-effects of society (as cited in Guterson, 1992).

American families have, however, in large measure relinquished many of their traditional functions, particularly the education of their children, to the government (Scott-Jones, 1991). During the Industrial Revolution, the exodus of men from the home to the workplace radically affected the existing role of the family and gave rise to a demand for mass schooling (Coleman, 1987). By 1918, compulsory school attendance laws existed in every state as a means of developing a responsible citizenry (Kitchen, 1991). Yet an even more profound effect upon children occurred during the feminist movement

beginning in the late 1960s as women also left home to join the workforce resulting largely in the change of the locus of control from the family to educational institutions (Coleman, 1987). As the majority of parents proceeded to work outside the home, the socialization and educational roles of the family have been gradually but steadily assumed by traditional educational institutions so that, today, the family as an educational and socializing institution stands at a watershed (Coleman, 1987).

Parents play a critical role in the educational success of their children at all levels and across all academic areas (Eccles, 1993; Epstein, 1989; Hoover-Dempsey & Sandler, 1995; Keith & Keith, 1993; National Excellence Report, 1993; Scott-Jones, 1984; Strong Families, Strong Schools, 1994).

Parental beliefs, attitudes, and behaviors directly impact student achievement more profoundly than any other socioeconomic factor (Alexander & Entwisle, 1988; Eccles, 1993; Grolnick & Ryan, 1989; Walberg et al., 1984). In fact, parental involvement is so critical to a child's educational success that it has recently been the focus of several national policy initiatives (Kagan, Moore, & Bredekamp, 1995; National Educational Goals panel, 1995; National Excellence Report, 1993; Strong Families, Strong Schools, 1994).

Interaction between parent and child not only affects academic progress, but also strongly affects socialization. Coleman (1987) identified the process of growing up in an environment populated primarily by other children as dangerous to healthy social development. Holt (1982) maintained that socialization in large groups such as are found in traditional educational

institutions was ten times more likely to be negative than socialization in small groups of two or three where human virtues of kindness, patience, and generosity could be more readily transmitted. Bronfenbrenner (1960) described educational grouping by age as a social anachronism which in large measure determines peers, limits developmental potential, and enforces an alienation from parents in particular and isolation from society in general. Illich (1970), Lightfoot (1978), and Bloom and Sosniak (1981) indicated that a child forced to choose between the world of school and security of family may develop guilt, disconnectedness, a distorted self-image, or learning difficulties.

Vygotsky (1978) asserted that the social context of a lengthy nurturance process yielded an optimal context for learning. A study of mother-child reading dyads led Bruner (1986) to observe that the mother "remains forever on the growing edge of the child's competence" (p. 77).

Bronfenbrenner (1960), in his comparative study of Russian and American childrearing practices, urged parents to exhibit an unconditional commitment to their children. With respect to special populations of gifted learners, VanTassel-Baska (1991) underlined the importance of the role of a sensitive, caring individual in the provision of appropriate intervention for gifted learners in special population groups. Tannenbaum (1992) asserted that

All in all, giftedness develops through an array of uniquely exquisite efforts by a caretaker who cares for the child's special qualities and who takes wise steps to accelerate their ripening. . . .Children with

superior inner resources can fulfill their promise only if the nurturance they receive is "tailor-made" to meet their special needs (p. 128)

Statement of the Problem

Whether in response to the particular needs of intellectually gifted learners, to a perceived insufficiency of the traditional educational system to both develop individual academic potential and to meet the educational needs of their children in a holistic manner, to the erosion of the educational and socialization function of the family over the past century, to the critical importance of parental involvement to the educational outcomes of children, or to other precipitating conditions, many parents have chosen to become intensely involved in their children's lives through the process of home education.

Home education is the primary education of a child by one or both parents or caregivers usually within the context of the home. It is not a new concept, but rather the expression of a philosophy of education in America that dates back to the beginnings of our nation. British immigrants exhibited a strong adherence to the British common law doctrine of parental liberty that described the maintenance, protection, and education of children as the duties of parents (Whitehead & Bird, 1984).

Experiencing an unparalleled resurgence over the past two decades, home education is no longer an "isolated activity of a marginal group of parents" (Van Galen & Pitman, 1991, p. 3) but rather a firmly established and

growing educational movement at the start of a new century. As an educational alternative, it is currently legal in all 50 states although regulations may vary not only from state to state but also from district to district. Although the National Center for Education Statistics, a division of the U.S. Department of Education (USDOE), estimated that there were only 850,000 homeschooled children in 1999 (Bielick, Chandler, & Broughman, 2001), the Office of Educational Research and Improvement, also part of the USDOE, estimated that there were 1 million homeschooled children during the same time period (Lines, 1999). Most researchers agreed that over 1 million children were participating in home education during the 2000- 2001 school year (Barna Research Group, 2001; National Center for Home Education [NCHE], 2000; Rhodes, 2000). Equal to the combined number of K-12 public school students in nine states, the steady increase in the number of home education participants over the past decade is expected to continue at a rate of 15% per year (Ray, 1997; 1999).

Granting a low home education population estimate of 1 million children, even if intellectually gifted learners constituted a mere two percent of this population, as many as 20,000 gifted children may currently be involved in home education. The question of the propriety of this particular educational alternative is voiced by many and varied stakeholders. Home educators, traditional educators, and lay persons alike question the impact of participation in home education on the development of intellectually gifted learners.

Statement of the Purpose

This study will seek to gain an understanding of the impact of home education on the talent development process of intellectually gifted individuals.

Conceptual Framework

Home education, an emerging field in its own right, is a complex entity closely related to the field of general education. The addition of an intellectually gifted individual to the home education equation heightens this complexity, thus also linking home education closely to the specialized field of gifted education. It is generally acknowledged in the gifted literature that a combination of natural ability, intrapersonal factors, and environmental factors influence the development of eminence (Tannenbaum, 1983; VanTassel-Baska, 1998). This basic formula is aptly enhanced by Gagne (1995) in his differential model of giftedness and talent. According to Gagne, it is the differential impact of both intrapersonal and environmental catalysts on the developmental process of an individual whose ability is at least among the top 15% of chronological peers that determines talent outcomes in intellectual, creative, socioaffective, sensorimotor, or other domains. Gagne described environmental factors as the surroundings (both familial and sociological), persons, undertakings, and significant events experienced by the individual. It is the coalescence of these environmental catalysts in the context of home education that will be the focus of this study.

As a means of more closely examining the catalytic role played by the parents of the gifted individuals in this study, the causal process model of parental involvement developed by Hoover-Dempsey and Sandler (1995) will serve as a specific organizer for interaction with parents. This model is grounded in the powerful effect of parental involvement on the educational outcomes of children and in the self-efficacy theory of Bandura. This model describes factors affecting the parental involvement decision. These influences are parental role construction, parental sense of efficacy for helping their children succeed in school, and general opportunities and demands for parental involvement as presented by their children and the schools. Next, the model examines the parental choice of involvement forms. The choice of involvement form is influenced by parental skills and knowledge, demands on time and energy, and specific opportunities and demands for involvement from their children and the schools. Modeling, reinforcement, and direct instruction are identified as the specific mechanisms through which demonstrated parental involvement influences child outcomes. Parental use of developmentally appropriate involvement strategies and the correspondence between parental and school expectations are isolated as variables which have a tempering effect on these mechanisms. Finally, effects on the child's educational outcomes are measured cognitively by demonstrated skill and knowledge and affectively by a personal sense of efficacy with respect to school achievement.

Research Questions

This study will seek to answer the following overarching question:

What contributions to the talent development of intellectually gifted individuals are fostered or inhibited by the environmental catalysts of surroundings, persons, undertakings, and events inherent in the process of home education? In answering this question, additional, more specific, questions may be considered including:

- 1. What are the perceived impacts of home education on the development of intellectually gifted individuals?**
- 2. What is the congruence of perceptions about the home education process between intellectually gifted individuals and their parents?**
- 3. How might specific mechanisms of parental involvement employed during home education impact the talent development of intellectually gifted individuals?**
- 4. Are there differences between male and female respondents with respect to environmental catalysts?**
- 5. Does the impact of environmental catalysts vary according to the duration or timing of home education?**

General Design

The research design for this study will be a qualitative one in the form of an embedded, retrospective, multiple-case study. Case study research was chosen specifically as it was referred to by Moon (1991) as a powerful methodology for gifted education research, by Foster (1986) as particularly

valuable for the study of a rare phenomenon, and by Yin (1984) as especially applicable to exploratory research in situations where the context is not easily distinguished from the phenomenon. Bogdan & Biklen (1998) maintained that an extensive examination of the developmental impact of social context within the bounded system of a particular case may result in an understanding of a broader phenomenon. The retrospective nature of the design allows perceptions of reality from an emic perspective to emerge and may also enhance understanding of the phenomenon. The use of an embedded design encourages multiple levels of analysis of a complex system within each case. Moreover, the use of multiple cases utilizes Yin's (1984) replication logic in the sense that findings in each additional case may serve to confirm and strengthen initial findings.

The application of this research design to the question of how the talent development of intellectually gifted individuals may be impacted by the environmental catalysts of surroundings, people, undertakings, and events inherent in the home education process will be delineated in Chapter Three.

Significance

Societal and Educational Conditions

"There is a propitious time for a particular contribution to be made in any given field or cultural milieu" (VanTassel-Baska, 1989, p. 159). Several societal and educational factors combine to make this a propitious time to study the impact of home education on the development of intellectually gifted individuals. First, particular emphases in traditional education are of concern

to educators of the gifted. These include a movement toward inclusive classrooms at the expense of specific programming for the gifted, an unwillingness for schools to take responsibility for the continuous development of individual academic potential over a 13-year period (VanTassel-Baska, 1998), and research focused on either central tendencies or at-risk populations which most often do not include intellectually gifted learners (Robinson, 1993). In addition, the emphasis in research and programming in the field of gifted education has not been on long-term effects of family context on development but rather on efforts to gauge effects of short-term interventions (Subotnik & Arnold, 1994).

Secondly, the family itself may be undergoing change. After predicting the death of the traditional family as it was known in 1970, a decade later Toffler (1980) predicted that the home would assume a new educational function of startling importance. Although Elkind (1995) described the family of today as a loosely-knit group of autonomous individuals, an exodus of women from the workplace to assume child-rearing responsibilities in the home that has shocked demographers and social experts alike suggests a possible change in familial roles (Burkett, 1995; Dobson, 1994; Kruger, 1994; Mahar, 1994). Leichter (1975) indicated that "periods of social change often entail fundamental shifts in the character of educational configuration and in the relation of various components" (p. 2). Finn (1985) asked whether formal education should be viewed as an extension of the family or as a function of society. Recently, a view of formal education as an extension of the family

strengthened by the supportive function of society is gaining acceptance.

Third, an increasingly vocal and demonstrative dissatisfaction with either the quality, the propriety, or the safety of public education is reflected in the dramatic increase in the number of families who are choosing to participate in home education (Klicka, 1993; Mayberry, Knowles, Ray, & Marlow, 1995). Home education has gone from obscurity to the covers of Newsweek (1998) and Time (2001) magazines. Children taught at home have achieved national recognition by winning the National Spelling Bee in 1997 and in 2000, winning first, second, and third places; by winning first place in the National Geography Bee in 1999 and second place in 2000; by receiving the Seaborg Nobel Prize Visit Award in the Intel International Science and Engineering Fair in 2000; by winning the National Federation of Music Club Composers Contest in 2000; and by winning a gold medal at the International Mathematical Olympiad in 2001 (NCHE, 2000; "USA's star," 2001).

Discussions about home education occur in such diverse places as dining rooms, school board rooms, and courtrooms and among such diverse groups as parents, children, extended family, and the general public; as educators of the gifted and administrators of gifted education, general educators and administrators, guidance counselors, educational psychologists, and researchers; as politicians, lobbyists, and lawmakers; and as law enforcement officers, lawyers, and judges. Home education itself has become a multimillion dollar enterprise with cooperative classes for children, state and national conferences for parents, journals for parents and researchers,

organizations formed to provide legal assistance and legislative information, testing and evaluation services, and companies supplying textbooks, computer software, computer interactive courses, and other educational materials.

Specific Calls for Research

These three societal and educational conditions are reflected in specific calls for empirical research within the fields of gifted education, general education, and home education. With respect to gifted education, VanTassel-Baska (1993, 1994) called for research concerning the effects of a tailored curriculum in particular contexts, for research concerning individual development in contexts that do not engage in formal identification of intellectual giftedness, and for research concerning optimal contexts for nurturing individual potential. The question of the relationship between optimal development and context was echoed by Marjoribanks (1994) and Monks and Mason (1991). A need for research focusing on the long-term impact of special educational experiences was specifically voiced by Coleman (1995) and Subotnik and Arnold (1994).

With respect to general education, as early as 1960, Bronfenbrenner indicated a need to study the effects of different educational settings on child development. Bronfenbrenner also made an appeal for research that might determine ways in which constructive changes could be instituted in the socialization process. Epstein (1989) suggested that little has been done to

identify specific mechanisms of the home environment that enhance student development.

With respect to home education, Cizek and Ray (1995) indicated that home education research can generally be divided into four distinct phases as follows: a) Demographic information concerning families engaged in home education, b) motivational factors influencing the decision to participate in home education, c) short-term cognitive outcomes for children who are educated at home, and d) short-term affective outcomes for children who are educated at home. Cizek and Ray, as well as Medlin (2000) called for home education research to move into a fifth phase that would focus on long-term outcomes of individual learners. Despite a rapid multiplication of research over the past decade, there remains a lack of research concerning long-term impact of home education due in large measure to the relative newness of the movement. Cizek and Ray also indicated the need for research focused on the definition and measurement of desired outcomes of home education that may lead to further understanding. McDowell (2000) suggested that research include the perceived impact of home education on its participants.

Significance of this Study

Scant research combining elements in the fields of gifted education, general education, and home education has been conducted. Through an exploration of the environmental catalysts of the educational context of home education and the perceptions and chosen pathways of individuals and their parents who have participated in home education, an integration of these

three fields may be strengthened. It is hoped that through this synthesis, not only may multiple calls for research be addressed in some measure, but also that professional knowledge may be enhanced on all three fronts by providing a deeper understanding of home education for each of its diverse stakeholders while at the same time providing an impetus for discourse among them. Additionally, this study may contribute to the developing theory of a nascent field of inquiry.

Limitations and Delimitations

Limitations

The target population of families participating in home education is neither easily accessible nor readily open to the scrutiny of non-family members. That the educational context of such families is unique and that they may be consistently more non-traditional could affect interpretation. The volunteerism of the participants in this study may indicate a biased sample. That some of the participants may not have participated in home education for the entire K-12 period may impede clear interpretation. The historical period in which the individuals matured may also affect any representativeness of results.

Delimitations

Delimitations include the purposive selection of participants for this study as well as both the number and levels of units of analysis to be employed. The determination of geographic access to the participants also serves to delimit this study. Additionally, that the researcher functions as the

primary measuring instrument may increase the danger of researcher bias (Gall, Borg, & Gall, 1996). However, researcher bias may actually be diminished through the constant iteration between interpretation and the data (Eisenhardt, 1989).

Definition of Terms

All terms defined will be operationalized through the development of questions to be posed in questionnaires or during interviews.

A crystallizing experience is “an overt reaction of an individual to some quality or feature of a domain; the reaction yields an immediate but also a long-term change in that individual’s concept of the domain, his performance in it, and his view of himself.” A distinction is made between an initial crystallizing experience which is defined as an early encounter that signals great affinity between an individual and some large-scale domain in his culture and a refining crystallizing experience which is defined as the discovery of a particular instrument, style, or approach within a field (Walters & Gardner, 1986, p. 309).

Developmental potential is the original endowment of talents, abilities, and intensities which determines the level of development a person may reach under optimal conditions. Rather than an exclusive focus on intelligence and productivity, this concept addresses the personality correlates of high ability children through a consideration of self-actualization and moral development (Piechowski, 1979, 1986).

Eminence is "high-level achievement and societal recognition, usually marked by a contribution that has historical significance in a given field or across several fields" (VanTassel-Baska, 1989, p. 146).

Focal relationships are "close, confirming relationships formed outside the immediate family that support, encourage, and stimulate the realization of potential that usually occur during crisis periods and are developed with different individuals at different times" (Albert, 1991, p. 82).

Giftedness is a stable but not static state of being that consists of a high level of general intelligence, the presence of insight or perception, and internal motivation impacted by the confluence of heredity and external factors resulting in advanced potential and demonstrated ability that may be domain-specific (Hopper, 1996).

Home education is the primary education of a child by one or both of his parents or caregivers in the context of the home which replaces compulsory attendance at a conventional school; it is often referred to in the literature and in common usage as homeschooling.

Human capital, as applied to family interaction, refers to the skills, capabilities, and education of a parent or other significant adult (J. Coleman & Hoffer, 1987).

Individualization is the process of gaining an optimal match between the child's current entry-level understanding and the challenge of new learning material through careful diagnosis of abilities and subsequent selection of appropriate strategies and materials (Roedell, 1989). This

concept is consonant with both Vygotsky's (1978) concept of the zone of proximal development and Csikszentmihalyi's (1993) concept of flow.

A mediator is one who interprets the environment for a child. This interpreter "understands the child's needs, interests, and capacities and takes an active role in making components of the environment, as well as of past and future experiences, compatible with the child " (Klein, 1992, p. 255).

Parental involvement describes "the degree to which [the parent] is actively involved in the child's education" (Coleman & Hoffer, 1987, p. 52).

Positive socialization includes the holistic development of the individual, his moral integrity, and his concern for the welfare of others (Passow, 1988).

Power, as it relates to specialized educational environments, denotes "the transfer of attitudes, skills, and/or knowledge learned in a specialized environment to a wide range of unspecialized environments in the immediate and long-term future" (Coleman, 1995, p. 172).

Social capital, "as applied to family interaction, refers to the norms, the social networks, and the relationships between adults and children that are of value to the child's development" (Coleman & Hoffer, 1987, p. 36).

Social context refers to "the social interactions, activities, and opportunities available in an environment . . . [pointing to] the existence of a qualitative change in the setting which elevates the experience of the participants beyond that of a conventional educational milieu" (Coleman, 1995, p. 171-2).

Socialization is "the process whereby people acquire the rules of behavior and systems of beliefs and attitudes that equip a person to function effectively as a member of a particular society" (Durkin, 1995, p. 614). It implies conformity to a group whereas **social development** is the ability to meaningfully connect with others that implies self-actualization (Silverman, 1992).

Specialized environment refers to "instructional settings that exist to maximize opportunities for, in this case, developing gifts and talents" (Coleman, 1995, p. 172).

Talent development is the process whereby "talents progressively emerge from the transformation of aptitudes into the well-trained and systematically developed skills characteristic of a particular field of human activity or performance" (Gagne, 1995, p. 106).

Summary

This chapter has served as a careful introduction to the proposed study dealing with home education and intellectually gifted individuals. The introduction included a presentation of the current state of traditional gifted education, specific needs of intellectually gifted learners, the role of parents in the development of gifted individuals in the past, current parental involvement, and an overview of the home education movement.

The statement of the problem which inspired this study involved the propriety of home education as an viable alternative for intellectually gifted individuals. The purpose of the study was then identified as a means of

gaining an understanding of the impact of the home education on the developmental process of intellectually gifted individuals. Using both Gagne's (1995) differential model of giftedness and talent and Hoover-Dempsey and Sandler's (1995) causal and specific model of parental involvement as the conceptual framework, specific research questions were identified.

The general design for this study was described as a qualitative one in the form of an embedded, retrospective, multiple-case study. Several societal and educational conditions and calls for research were delineated as a backdrop for the significance of the study. Finally, limitations and delimitations were identified and relevant terms were defined.

The next chapter will present a thorough review of early familial and educational experiences in the lives of eminent individuals, parental involvement, and home education itself, three constructs necessary for an understanding of the home education of intellectually gifted individuals.

CHAPTER TWO

REVIEW OF THE LITERATURE

The institution of the family is as old as life itself. Until the rise of public education during the last century, the responsibility for and direction of the education of its young have been the domain of the family. Over the past two decades, a rapidly growing number of families have reclaimed this responsibility through the practice of home education. Home education, the primary education of a child by one or both of his parents or caregivers in the context of the home replacing compulsory attendance at a conventional school and often referred to in the literature and in common usage as homeschooling, has mushroomed into a nation-wide movement embracing nearly one out of every one hundred school-age children (NCHE, 2001).

A major concern of both parents of intellectually gifted children and conventional educators is the viability of home education for intellectually gifted children. As the current literature in gifted education, general education, or home education contains little research that addresses this issue, it will be necessary to examine three separate strands of research in order to gain an informed perspective. Examination of existing research on the early familial and educational experiences of eminent individuals may reveal a particular form of parental involvement and its impact on the development of gifted individuals in the past. Examination of current general education and sociological research on parental involvement

should reveal the impact of parental involvement on children's educational and social development in the present. Examination of home education research promises to reveal what is currently known about this specific form of parental involvement.

This literature review will be comprised of three major sections that will address studies of early familial and educational experiences of eminent individuals, parental involvement, and home education. Each section will contain a brief introduction, a synopsis of relevant research, and a synthesis of reported findings. At the conclusion of this chapter, a brief summary of these three constructs will serve as a springboard to the proposed research project.

Studies of Early Familial and Educational Experiences of Eminent Individuals

Examination of the early life experiences of eminent individuals may yield important implications for optimal development of potential in gifted individuals. While studies in this area offer varying emphases, this review will focus on the elements of personality factors, early family life, and educational experiences with respect to the development of eminence. The studies, sorted into six categories, will be treated chronologically with the exception of those studies based on related data that will be addressed sequentially. Early eminence studies will be considered first followed by domain-specific studies that include studies of

prodigies. Next will be the major longitudinal study of eminence followed by a classic talent development study. Then, two developmental models that were derived from syntheses of literature will be presented followed by studies dealing specifically with development of talent in females.

Early Eminence Studies

One of the first studies to relate the level of intelligence to the attainment of eminence was conducted by Cox (1926). Part of the Terman (1925) genetic study of genius, this seminal work included estimated IQ scores and identification of over sixty common characteristics of 300 famous men who lived from the 16th century to the beginning of the 20th century. These individuals were selected from a larger sample in a study done by Cattell (1903). Through the evaluation of biographies, letters, and encyclopedia entries, Cox found that most of these eminent men not only possessed above-average IQ scores but also had an early family advantage that included excellent educational opportunities (VanTassel-Baska, 1989).

Yet Cox determined that the presence of persistence and motivation rather than merely a high level of intelligence served as the primary determinant of eminence. Those who ranked in the top third of the study shared the additional personality traits of self-confidence and strength of character but were not immune to periods of extreme depression or anger (Trost, 1993). This identification of personality traits

as a critical factor in achievement was a major contribution to the field (Klein & Tannenbaum, 1992).

Several researchers have built on these early studies by Cattell and Cox. In an effort to determine childhood conditions that were conducive to the development of genius, McCurdy (1960) narrowed Cox's sample by choosing twenty-seven men whose estimated IQ scores were above 160. Seven of these men were later eliminated due to lack of biographical information. Four emergent characteristics of childhood patterns in the lives of these eminent individuals were identified by McCurdy. First, an intense parental and adult involvement, consistent and intimate, in the life of the child especially with respect to the child's education was evident. Traditional public schooling was regarded with disfavor so much so that attendance at a university was often the first conventional school experience outside the home. These parents encouraged and facilitated extensive exploration of the child's interest areas. However, the limitation of interaction with other children through isolation from non-familial peers was a common occurrence. Extensive use of fantasy primarily as a coping mechanism was also noted. Although McCurdy's study focused on environmental conditions and responses to those conditions, his findings supported Cox's assertion that both inherited ability and early family environment played a fundamental role in the development of genius.

Believing that achievement scores may be weak predictors of adult achievement and contentment, one researcher chose to focus not

only on optimal childhood conditions for the development of eminence but also on childhood personality traits. The study by Walberg et al. (1981) applied a rating scale designed by Walberg to an amended version of the Cox sample. Seventy-six researchers provided further information about their particular biographical subjects. Although advanced intellectual ability was found in 97% of the men with 80% experiencing success in school endeavors, this study, as did McCurdy's, corroborated Cox's determination of a high level of intelligence as a necessary but not sufficient criterion for the attainment of eminence. Through a principal components analysis, positive psychological development in combination with parental encouragement of their children and stimulation of their children's interests as well as limited exposure to immediate gratification were found to be significant factors as well. These findings again called attention to the need to consider a confluence of factors including intellectual ability, personality, and family milieu in the development of eminence.

Goertzel and Goertzel (1962) followed a similar research design. Their sample of 400 individuals did, however, include women as well as men and was limited to 20th century individuals who were listed in a standard reference work and had two or more biographies in the Montclair, New Jersey Public Library. Only one biography was required for those born outside the United States. Over 80% of the individuals displayed a high level of intelligence although at least 60% had

encountered serious problems in traditional school settings. The ability to work effectively and independently and the presence of intellectual curiosity surfaced as common personality traits. Nearly one-fourth had experienced a handicapping condition of some sort described by Goertzel and Goertzel as having experienced the early death of a sibling or been sickly, homely, or overweight; as children, most had been rejected by peers. Identified, in general, as part of middle-class professional families, their parents were found to have had a positive effect on achievement motivation particularly in viewing life's work as the grand passion.

Learning and personal opinion were highly valued; for many, the family was seen as an intense forum for intellectual exchange. Many parents were unconventional in their approach to education and, as a result, tutored their children exclusively (VanTassel-Baska, 1989). Family adversity and conflict were experienced by 85% of the individuals.

Paternal passivity and/or alcoholism and dominant or smothering mothers were recurring factors. However, the ability to deal with these familial adversities was a prevalent and perhaps necessary characteristic of these achievers. This focus on the role of familial adversity and interaction in the development of eminence added a new dimension to eminence studies.

Simonton (1984), in a re-examination of both the Cox (1926) and the Goertzel and Goertzel (1962) family data, not only confirmed the importance of a requisite level of intelligence for genius and leadership, but also found it to be the best single predictor. As indicated by Goertzel

and Goertzel, the premium placed by parents on intellectual development again rose as a prevalent feature in the early lives of the subjects. However, using a multivariate analysis, Simonton determined that, instead of being direct as expected, the relationship between educational attainment level and eminence followed a Gaussian curve (Ochse, 1990). Focusing on the context of the development of eminence, Simonton identified the predominant family environment of these individuals as intellectually stimulating; their community context as providing both an awareness of cultural diversity and an access to role models; and their larger social context as either politically unstable, negatively affecting their development, or socially unstable, fueling their formation of a system and encouraging productivity (Horowitz & O'Brien, 1985).

Domain-specific studies

Several researchers have concentrated on the attainment of eminence in specific domains. In a study of eminent scientists, Roe (1953) selected her all-male sample of biologists, physicists, and social scientists based on membership in the National Academy of Sciences or the American Philosophical Society and on additional nominations by a panel of experts in each field. Through extensive interviews covering areas such as family life, achievements, interests, and ways of thinking and through the use of intelligence testing (the Verbal-Spatial-Mathematical Test developed especially for Roe by the Educational Testing Service) and

personality testing (the Thematic Apperception Test and the Rorschach Test), Roe made several observations. Although some marked differences surfaced among the three groups of scientists, their lives reflected common patterns. In addition to being independent learners, as the Cox study demonstrated and the re-examination of that study confirmed, a very high level of intelligence and persistence were characteristic of these scientists. Often the eldest child, these men were from non-religious families that appeared to be predominantly middle-class or upper-class headed by professional fathers. Many experienced, if not profound familial disruption during their early childhood, at least the presence of tension. Several reported, some positively, their tendency toward isolation from other children (Horowitz & O'Brien, 1985). Lack of parental warmth subsequently confirmed by the study of Goertzel and Goertzel (1962) and the high premium placed on learning by parents later confirmed by Albert (1980), Bloom (1985), Goertzel and Goertzel (1962), MacKinnon (1962), McCurdy (1960), and Zuckerman (1979) were first isolated by Roe. Roe posited that the presence of a driving absorption in their work and the attainment of eminence, at least by scientists, may be due to an established method of coping with adversity and tension in their early lives (Albert, 1979; Ochse, 1990; Subotnik & Arnold, 1994).

In 1979, Zuckerman also featured scientists in her study of 74 winners of the Nobel Prize for Science who resided in the United States at the time. In a retrospective examination of sociological factors that

contributed to professional advantage, Zuckerman confirmed the importance of an early role model who instilled a positive attitude toward learning (Ochse, 1990; Subotnik & Arnold, 1994). Choice of higher educational institutions was perhaps critical to later achievement; seventy-five percent of these scientists received doctoral degrees from one of five well-known institutions (Subotnik & Arnold, 1992). Most of these Laureates learned most effectively through modeling and, therefore, made efforts to apprentice themselves to brilliant scientists. Access to the scientific elite was more readily obtainable due to these apprenticeships.

Mackinnon (1962) chose to focus on architects for his study of the personality correlates of creativity. With a sample of 40 males nominated by experts in the field of architecture, Mackinnon used retrospective and cross-sectional methods as well as several personality tests to examine the developmental impact of both early childhood and later influences. Interestingly, a word association test proved to be the best indicator of creativity. Significant personality characteristics that emerged were independence in learning, openness to new experiences, and a higher frustration tolerance (Trost, 1993). The majority exhibited introversion and a strong inner awareness possibly due to the frequency of domicile changes including periods of foreign residence during childhood.

While fathers were well-respected by their sons and accomplished in their careers, a more significant commonality may have been the autonomy of the mothers who actively pursued their own interests or

careers. A lack of intense closeness, especially with the father, appeared to have had a positive effect. These parents demonstrated great respect for their child's abilities, and, within the constraints of consistent standards and discipline, granted their child much freedom in decision-making. Parental expectations included responsible behavior and the development of a personal code of ethics usually including integrity and excellence. Discussions often centered on intellectual and aesthetic interests shared with the parent(s); yet, in the majority of cases, there was a distinct freedom from the pressure to make an early association with a particular career (MacKinnon, 1962).

Prodigies

A longitudinal study that, like Albert's (1991), contributed to the understanding of the role of the family in the development of talent and resulted in an explicit development theory was that of Feldman (1986). Defining a prodigy as a child having a performance ability in at least one intellectually challenging field at a professional level, the development of six child prodigies in the area of mathematics, chess, music, writing, and language was examined in order to further establish the concept of domain-specific abilities. These case studies of the children and their families lasting for more than ten years yielded a picture of family dedication centering on the development of potential in the child. Emerging from this qualitative work are, once again, a convergence and a necessary interaction of the variables of intellectual ability, the child's

perseverance and motivation, and parental recognition and support of the child's ability. These factors working together within a familial and social context in a particular domain comprise Feldman's coincidence theory (Morelock & Feldman, 1993).

An intriguing aspect of the development of early prodigious behavior surfaced in a case study of the family of violinist Yehudi Menuhin. Feldman and Goldsmith (1986) gleaned data primarily through an autobiography and a biography written by Menuhin's nephew. It was discovered that both Menuhin's mother and father were direct descendants of a centuries old lineage of Hasidic rabbis in which music played a central role in higher communication with God. Although his parents rejected their religious tradition and denied any link between their heritage and Menuhin's extreme musical giftedness, he remained distinct from other musicians by an almost spiritual essence of his music. As aptly described by Fowler (1986), this study posited that "highly stimulating models of child care occurring in certain families may in fact emerge from a subcultural pattern of family ecology that transcends and passes through several generations" (p. 7). These transgenerational influences in the form of traditions, tendencies, or values may differ in intensity, intentionality, directness, or appearance in successive generations.

An implicit developmental theory of child prodigies was elucidated by Shavinina (1999). Building on Vygotsky's (1978) concept of the zone of proximal development and the Columbus Group's (1991) concept of

asynchronous development, Shavinina maintained that only during sensitive periods of heightened and selective responsiveness to one's context can qualitatively new understanding and significant advances in intellectual development be achieved. Apart from such sensitive periods, identical experiences and influences will not positively impact development to the extent otherwise possible.

Longitudinal study of eminence

One of the first contemporary researchers to consider family influence as a critical factor in the development of eminence was Albert (1978, 1991, 1994; Albert & Runco, 1986). What began as a determination of the predictive value of early family background on career choice has evolved into a study of the influence of early family life on the development of potential resulting in a model of the developmental paths to eminence. This developmental-interactional model attempted to account for the infrequency of eminence through the identification of types of experiences and interpersonal relationships necessary for the achievement of eminence and the identification of developmental paths most likely to lead to eminence. The demonstration of outstanding performance, productivity, influence, and/or creativity in a particular field is often related to the concept of profound giftedness. This giftedness is exhibited in childhood by what Albert termed specialness. Specialness included a complex mixture of abilities as well as such behaviors as intensity of focus, individualization, and stability of motivation and often resulted in a special,

distinctive position within the family structure (Albert, 1994). It functions both as an experience-producing and an experience-directing organizer of an individual's development from an early age affecting interaction in many settings. Marjoribanks' (1995) concepts of family presses and child perception of the environment were incorporated into Albert's study.

Albert's systematic, longitudinal study of eminence-in-the-making consisted of two divergent groups of exceptionally gifted boys ages 11 through 14. The first data collection point for this mixed design study began in 1977 with a group of 26 boys who were part of Stanley's Study of Mathematically Precocious Youth (SMPY). At the age of 12, this group had a mean score of 635 on the Scholastic Aptitude Test. In 1978, data were collected from 28 boys with an IQ greater than 150 who were part of the California Mentally Gifted Minors Program. Identical instruments including semi-structured interviews and standardized creativity and personality tests were completed by both parents and children. Parent demographics showed middle-class to upper-middle class status with a mean educational level of 16 years for mothers and 17 years for fathers. Sixty-five percent of the mothers and 90% of the fathers were college graduates. (Albert, 1994).

The first social milieu experienced by a child is the family context. Albert (1991) maintained that the impact of this family context on the development of achievement was both primary and profound. In addition to genetic intellectual ability, parents transmitted values, expectations, and

traditions. Formal education had been valued for several generations in the majority of families suggesting an intergenerational perspective on the transmission of family values. Parenting practices in these families were found to be far from random, but rather, directed toward specific ends. These directional practices, called as "presses", were interpreted as external pressures by the child (Albert, 1978, 1991; Marjoribanks, 1979, 1995). In sum, the family context "lays the basic groundwork, sets the emotional and cognitive tenor for development, determines major themes and interests, and directs the child toward the future" (1991, p. 77).

According to Albert (1991), an important dimension of interaction in the family context are the personality characteristics of the individual child. A child's identity which reflects his perceived self and his ego ideals which reflect his image of aspirations and expectations of his future arise from identification with his parents and other early key figures and as a consequence of demonstrated abilities. The majority of both groups of boys showed common traits of independence, desire for complexity and challenge, and unconventionality in their domain of interest.

The effects of performance on achievement motivation are stabilized around the age of eight for American males causing Albert to state that "potential acquires validity through use leading to real-life consequences" (1991, p. 79). The interaction of several conditions around the age of twelve impacts further critical development. These include a stabilization of personality traits and values, a stronger sense of identity

(either positive or negative), the cognitive development of formal aspirations, and an increased degree of focused attention.

Albert's (1991) explicit developmental-interactional model of the paths to eminence, derived from nearly two decades of research with 54 families, reflects the interaction among high intelligence, personality factors, family processes, and significant experience(s) within a specific domain. These relationships are defined by type of parental involvement, type of family experience, key experiences outside of the family, and chosen domain resulting in the establishment of an emotional and cognitive framework which impacts the development of identity and sense of competence. Two distinct paths, each closely aligned with the two divergent groups of boys, emerged not as opposing ends of a continuum but rather as parallel consequences of relational patterns.

An incongruous, uneven developmental path arose out of a familial context of conflict and tension either between parents and/or between parents and the child generally due to childrearing issues or career choice. The demonstration of developmental potential of children in this setting, particularly for the emotionally sensitive child, is at a high degree of risk if they are unable to move beyond the turmoil. The combination of these personality characteristics of the child and continual parental indifference or rejection in a conflictual familial context are powerful preconditions for focal relationships which were defined by Albert (1991) as "close, confirming relationships formed outside the immediate family that support,

encourage, and stimulate the realization of potential" (p. 82). Usually occurring during crisis periods and developed with different individuals at different times, these focal relationships may serve an ameliorative function with respect to the effects of early conflict and may increase the demonstration of potential through the enhancement of self-esteem, attentional focus, and passionate interests especially as these boys move toward people-oriented or passion-oriented fields (Albert, 1991).

The chief characteristic of a congruous developmental path was not necessarily familial tranquility but instead the presence of positive relationships and balance in a secure environment. Parental acceptance and encouragement of the child's giftedness may have allowed for predominately smooth developmental progression due to age-appropriate individuation of educational and social inputs and a sense of belonging within the family. Especially for children focused on scientifically-based careers, these preconditions set the stage for a crystallizing experience. The concept of a profoundly intense reaction to an experience that either directed the child to a particular domain or confirmed his involvement in that domain was developed by Walters and Gardner (1986). The demonstration of the developmental potential of these children may be at risk due to a lack of intense motivation mediated by emotional comfort and complacency. Albert noted that compliant children in a turbulent family context were also highly receptive to crystallizing experiences.

Although crystallizing experiences and focal relationships occur in different domains, both events are profoundly validating, linking aptitude and interests through a sense of calling. Focal relationships and crystallizing experiences may foster cognitive exploration of a field and conceptualization of future achievements. While both phenomena are intensely private experiences, each has a relational aspect as well, thus allowing the influence of certain mentors, teachers, or other adults to impact development (Albert, 1991).

The 10-year follow-up study produced surprising results (Albert & Spangler, 1992). Fully one-third of the boys in each group had experienced both personality changes and career aspiration changes that now closely aligned them with the opposite group. While the non-crossovers in each group had show negligible ego development, the cross-overs experienced significant growth with the development of the math-science cross-overs being particularly striking. The developmental growth of the cross-overs was positively linked to the degree of the parents' own high level of ego development and of demonstrated support for their sons' development.

Classic talent development study

A classic study of a related nature is relevant to a discussion of the early environment of eminent individuals. In an attempt to isolate conditions that nurture the development of talent, Bloom and Sosniak (1981) and Bloom (1985) selected a sample of 120 participants who had

reached a high level of distinction before the age of 35 in the domain of cognitive ability (research mathematicians or research neurologists), aesthetics (concert pianists or sculptors), or psychometric ability (world class tennis players or Olympic swimmers). Data collection included a focus on early characteristics and the role of the home in talent development.

Through analyses of retrospective interviews with the participants, their parents, and their teachers, several commonalities in the early home environment became evident. Parental involvement was critical both to the early identification of talent and to the provision of appropriate intervention. There was a strong child-centered orientation in these cohesive homes. In the majority of cases, at least one parent intensively devoted time and resources in an effort to provide optimal conditions for the development of the child's talent. Often a very close bond, usually with the mother, continued to develop (Bloom, 1985).

Bloom and Sosniak (1981) described the role of the parent(s) as not only advocates but also tutors, training their children through the use of modeling, direct instruction, and reinforcement. Having strong expectations that their children would achieve specific goals, these parents valued hard work. The child's motivation and self-confidence were fostered through sequential mastering of tasks which was facilitated by an ability to learn rapidly. For most of the children, a passion for and

participation in a particular field was demonstrated before the age of twelve.

In a further attempt to identify environments conducive to the development of talent, Bloom and Sosniak (1981) compared traditional education characteristics with those of the talent development structure. In traditional education, formal instruction is generally conducted by one teacher with many students, whereas in the talent development model, instruction may be informal or direct and occurs on a one-on-one basis following a tutorial model. In traditional education, standards are predetermined by age and children are treated as part of a group, whereas in the talent development model, instruction is individualized and the uniqueness of each child is valued and encouraged. In traditional education, group learning determines progress, whereas in the talent development model, individual mastery is the criterion. In traditional education, similar performance is expected in all subjects, whereas in the talent development model, mastery is expected only in the talent domain. In the traditional model, students usually experience a yearly change of teachers, whereas in the talent development model, a child usually remains with a particular teacher for many years. Traditional schooling for the participants of this particular study was characterized by the researchers as having a slightly positive effect on the development of talent when opportunities for mentors or performance arose in the school setting, as having a negative influence on talent development when

demands of time or areas and level of instruction conflicted with talent domain, or as having no relation to the development of talent when traditional education was viewed as completely distinct from talent growth.

Models derived from eminence literature reviews

A synthesis of the eminence studies literature by VanTassel-Baska (1989) resulted in a conceptual model for the development of eminence. The model begins with the development of individual characteristics and behaviors of the child experienced in an external social context comprised of family, school, and community. The quality of the nurturance of the child is affected by the relational aspects of those social contexts. It is during this early childhood period that VanTassel-Baska warned that “the right context for the nurturance process appears to be as critical at this stage as are key individuals” (p. 157). In the period of adolescence and adulthood, manifestations of achievement in a given domain occur in a restructured social context. The family structure of early childhood takes on a new constellation of members and roles, school as a context for development is replaced by the workplace, and perceptions of experiences and others in the wider community take on critical importance. In later adulthood and old age, the individual continues to contribute significantly through his lifework.

Personality variables critical to the development of eminence are identified as independence, risk-taking, unconventionality, and, perhaps most importantly, self-perception. VanTassel-Baska (1989) indicated that

perception of both past and present conditions and events may be the key to understanding an individual's response to early familial adversity such as strained relationships, tragedy, or early parental death. Fathers were often seen as passive while mothers displayed a dominant personality.

Many parents created a learning-centered environment in which intellectual pursuits were highly valued and the child's participation and productivity were strongly encouraged (Albert, 1979; Bloom, 1985; Goertzel & Goertzel, 1962; MacKinnon, 1962; Roe, 1953). Traditional schooling held little significance for a majority of parents and children alike; negative traditional schooling experiences were the norm for many of these children. Many parents, often the father, chose to educate their children at home or to employ a tutor. Of those that did remain in the conventional educational system, many progressed through the system at an accelerated pace (Goertzel & Goertzel, 1962). Whether by design or circumstance, most of the children had few peer relationships (Roe, 1953). Many found companionship in a sibling or even a parent (McCurdy, 1960). VanTassel-Baska (1989) perceptively identified a common thread woven through each of the variables as "pattern-breaking at a fundamental level" (p. 155). The personality variables of risk-taking, independence, and unconventionality; the highly intellectual climate of the home; the unconventional disregard for primary and secondary educational institutions; and the relative isolation from peers each reflected attitudes and actions distinct from the society in which they lived.

A literature review of creativity and eminence by Ochse (1990) resulted in a model depicting the determinants of creative genius in which the recognized excellence of contributions defined creativity. Diverse events, mechanisms, and agents in childhood produced similar effects in the development of creators. Acquisition of values, precocious development, and stress yield persistent independent intellectual activity coupled with a strong desire to excel. From this motivational drive develops an advanced knowledge and skill in a particular domain and the habit of working alone which allows for creative inspiration. This creative process is cumulative involving reflection and qualitative transformations within the domain.

Studies of female development of talent

A treatise by Silverman (1996) is an apt starting point for any review of studies of eminent women. "The woman question" posed by Hollingworth nearly a century ago remains today. Silverman cited Hollingworth as follows:

"The woman question" is how to reproduce the species and at the same time to work, and realize work's full reward, in accordance with individual ability. This is a question primarily of the gifted, for the discontent with and resentment against women's work have originated chiefly among women exceptionally well-endowed with intellect. (p. 37)

It is this inhabitation of two worlds that moved Silverman to press for a broadened definition of possible achievement domains in eminence and giftedness. The addition of an interpersonal/relational domain would allow the identification of remarkable achievements by women in currently unrecognized spheres.

Two explicit theoretical models address developmental patterns in eminent women. First, in an historical case study analysis, the lives of two eminent female authors provided the basis for the formation of a theory of talent development for female writers (VanTassel-Baska, 1996). Through the identification of key influences in talent development, the lives of Charlotte Bronte and Virginia Woolfe were examined using a triangulation of sources. Acknowledging the prerequisite qualities of intelligence, perception, and empathic understanding, both inner characteristics and outer forces in the lives of these two women were detailed. Inner characteristics influencing talent development consisted of marked intensity of feeling, the desire to create meaning and a concomitant perceptual ability enabling one to do so, the commitment to ideas, the ego-strength to take risks, and the self-discipline to work alone.

These inner qualities were influenced by the particular family contexts in which Bronte and Woolfe lived. They each experienced a sheltered existence in the relative isolation of the nuclear family. Their families formed a basis of support, fostered intellectualism, and allowed

for solitude. At an early age, each writer experienced the death of her mother.

Of perhaps critical importance was the educational milieu in which Bronte and Woolfe matured. Both writers received informal instruction from their fathers in the context of their homes. For Bronte, this instruction took the form of tutoring with her siblings by her father, who also encouraged his children to use his library and to participate in regular intellectual discussions during mealtime. Woolfe was tutored by her father in the areas of history and philosophy and by an associate of the family in Greek. She also participated regularly in small discussion groups. Both women became independent learners.

Drawing from patterns uncovered in the lives of Bronte and Woolfe, VanTassel-Baska (1996) identified a distinct path of talent development for female writers. The difficult path consists of five stages, the first of which is the family and its accompanying value system into which an individual is born. This particular family system would include an emphasis on intellectual exchange, self-study, and freedom for solitary pursuits. The second stage is characterized as an informal period of talent formation in which the use of audience, usually family members, is a vital component. Active experimentation with form and continued self-study are the hallmarks of the third stage. The fourth stage requires a specific environment consisting of time, space, and privacy in which to work for extended periods of time. Progressive growth toward excellence in the

craft is the final stage of talent development. Optimal development for Bronte and Woolfe included the divination of meaning in their lives and the ability to communicate that meaning through their work.

The second explicit theoretical model of talent realization in women was derived from a contemporary comparative case study by Reis (1996). Using purposeful sampling to select twelve American women who had achieved eminence between the ages of 55 and 90, data were gathered through questionnaires, interviews, and both primary and secondary sources. As a result of constant-comparative analysis, four factors emerged as enablers of female talent development. These factors included intelligence (cognitive and/or contextual) and specific talent; personality traits consisting of motivation, risk-taking, creativity, and patience; environmental factors (family and social contexts); and perceived importance of the talent manifestation to society. According to Reis, these four factors exerted a combined influence on a woman's sense of self which, when fully developed, led to what Gruber (1985) called moral giftedness. This level of moral giftedness was comprised of a drive to contribute to a field in a meaningful manner and the perseverance to engage in or harder yet, to delay for a period, engaging in demanding work. It was the effect of the determinant factors on the development of self that allowed for the release of talent manifestation which for each of the twelve women in this study reached its fullest measure after the age of fifty.

Kerr's (1985) study of 33 eminent women revealed the presence of distinct developmental commonalities. Several themes were evident in the lives of all the women in the study. All had spent much time alone during childhood. Each was committed to an idea, movement, or group; each was driven by a sense of mission or call; and each was able to demonstrate commitment through action. Most of the women had received individualized education usually through tutoring or early mentoring. As they matured, most women neither conformed to nor were accepted by social groups with which they had contacts; many aggressively battled sexism when it was encountered. Conflict between acceptance and achievement resulted in a deeper commitment to their work. Kerr discovered that, over a period of time, many of the women were able to achieve a positive integration of career and family. An empirical study of eminent women scientists by Filipelli and Walberg (1997) replicated the work done by Walberg, et al. (1981) with a male cohort. The female candidates were drawn from Notable American Women; data were gleaned from biographical and autobiographical material. Findings revealed that the most prevalent childhood characteristics of these eminent women coincided with those in the study of male eminence. An amazing 70% of these women had not been successful in traditional educational settings. Nearly one-half of the sample was taught either directly or otherwise mentored by a parent or another adult. Immediate gratification in childhood was experienced by only one of the women.

Again, a high level of intelligence in combination with personality traits of perseverance and independence in the context of powerful parental influence interacted to yield eminence.

A synthesis of the research presented in *Remarkable Women* (1996) yielded a new model for adult female talent development by Noble, Subotnik, and Arnold (1996). In this model, the foundation for the adult female demonstration of giftedness includes the necessary individual factors of personality traits, family context, and psychological resilience but is distinguished from other models by the addition of a new foundational dimension called social marginalization. It is this dimension of the distance from the mainstream of a particular cultural context and the amount of movement toward the mainstream that determine achievement for women. Foundational factors particularly affecting women are minority status, struggles with self-esteem, and family-career issues. The model next identifies filters that, in a manner similar in males, affects the fruition of talent. These filters consist of actual, perceived, and developed opportunities as well as the specific talent domain. The final component of this model presents an expanded construct of spheres of influence by indicating a personal domain in which a woman may work to influence individuals as well as the traditional public domains of exceptional leadership and eminence as a result of transforming a field. It is these unique contributions of foundational marginalization and personal spheres of influence that are crucial to female talent development.

Summary of Studies of Early Familial and Educational Experiences of Eminent Individuals

Two significant conclusions can be reached by this review of the eminence literature arranged topically to include early eminence studies, domain-specific and prodigy studies, a longitudinal study of eminence, a classic talent development study, models derived from syntheses of literature, and female talent development studies. First, it is a confluence of factors that affects the development of potential (Albert, 1994; Goertzel & Goertzel, 1962; McCurdy, 1960; Walberg et al., 1981). Intelligence as reflected in a high IQ score is a necessary but not sufficient factor in not only the attainment of eminence but even in high-level academic achievement (Albert, 1991; Cox, 1926; McCurdy, 1960; VanTassel-Baska, 1989, 1996; Walberg et al., 1981). It does remain as the best single predictive factor of later adult performance in the professions (Simonton, 1984).

Specific personality traits contribute to the development of potential as well. The most commonly identified traits were independence, especially in learning (Albert, 1991; Filipelli & Walberg, 1997; Goertzel & Goertzel, 1962; MacKinnon, 1962, 1978; Roe, 1953; VanTassel-Baska, 1989, 1996), strong motivation (Albert, 1991; Bloom & Sosniak, 1985; Cox, 1926; Feldman, 1986; Goertzel & Goertzel, 1962; Reis, 1996), and persistence (Cox, 1926; Feldman, 1986; Filipelli & Walberg, 1997; Roe, 1953).

The family context consisting of its climates, its values, and its practices is the third factor that plays a critical role in the development of potential. The family climate has been described by Roe (1953), Albert (1991), and VanTassel-Baska (1996) as one of adversity or, at best, an atmosphere of little emotional warmth. Other researchers, however, as well as Albert, himself, reported the presence of evenness as well as a sense of security (Albert, 1991; Bloom & Sosniak, 1985; MacKinnon, 1962, 1978). The most consistent family value reported was an emphasis on learning and intellectual pursuits (Albert, 1980; Bloom & Sosniak, 1985; Feldman, 1986; Filipelli & Walberg, 1997; Goertzel & Goertzel, 1962; MacKinnon, 1962, 1978; McCurdy, 1960; Simonton, 1984; VanTassel-Baska, 1989, 1996; Zuckerman, 1979). The possibility of an intergenerational aspect of the presence of particular family values and the transmission of these values is indicated by both Albert (1994) and MacKinnon (1978) as well as Feldman and Goldsmith (1986).

Several distinct family practices have been isolated. A special recognition of the child's ability by the parents (Albert, 1991; Bloom & Sosniak, 1985; Feldman, 1986; MacKinnon, 1962, 1978; McCurdy, 1960) as well as parental encouragement, effort, and/or intervention (Albert, 1991; Bloom & Sosniak, 1985; Feldman, 1986; MacKinnon, 1962, 1978; McCurdy, 1960; VanTassel-Baska, 1996; Walberg et al., 1981) have even afforded some children a special position within the family (Albert, 1991) and have resulted in directive parenting (Albert, 1991; Filipelli & Walberg,

1997). The practice of delayed gratification was reported by Bloom and Sosniak (1985) and Filipelli and Walberg (1997). A key element common to many families of eminent individuals is that of pattern-breaking behavior on the part of the parents (VanTassel-Baska, 1989) which may have resulted in what Goertzel and Goertzel (1962) described as a release for the child from the fear of innovation.

This pattern-breaking behavior in the families of eminent individuals has been frequently reflected in the area of education (VanTassel-Baska, 1989). Although Walberg et al. (1981) described 80% of the individuals in their study as having had a successful education, all other researchers who have considered educational context reported lack of success in traditional schools (Bloom & Sosniak, 1985; Goertzel & Goertzel, 1962; McCurdy, 1960; VanTassel-Baska, 1989). Tutoring by parents or special tutors, reported by several researchers (Bloom & Sosniak, 1985; Goertzel & Goertzel, 1962; VanTassel-Baska, 1996), allowed for important educational interventions such as focus in interest area (MacKinnon, 1962, 1978; VanTassel-Baska, 1989), early access to role models (Bloom, 1985; MacKinnon, 1962, 1978; Simonton, 1984; VanTassel-Baska, 1989; Zuckerman, 1979), and voracious reading (MacKinnon, 1962, 1978; McCurdy, 1960; Ochse, 1990; Roe, 1953). Pattern-breaking behavior was also demonstrated by an isolation from peers, either orchestrated or circumstantial (Albert, 1991; Goertzel & Goertzel, 1962; MacKinnon, 1962, 1978; McCurdy, 1960; Roe, 1953; VanTassel-Baska, 1996).

VanTassel-Baska's (1989) description of the development of potential eminence as a process of individual development in a specific context interacting with the nurturance of significant others is strongly supported by the preceding review of literature.

Parental Involvement

Examination of the effects of parental involvement on children's educational outcomes is of critical importance to a study of the efficacy of home education. The previous section centered on parental involvement practices that had been specifically employed by parents of eminent individuals. This section will focus on parental involvement studies that for the most part deal with more general populations. Rather than a chronological treatment, the organization of these studies will move conceptually from broader themes in parental involvement beginning with the socialization process to more narrowly defined constructs such as parental role, parental educational expectations and aspirations, children's perceptions of parental educational involvement, and a specific process model for the development of parental involvement.

Socialization Processes

In developing a theory of the socialization process, Bronfenbrenner (1970) chose to explore the differing perspectives of the two most powerful nations at that time. Through cultural immersion, participant observation, interviews, and perusal of the most popular Russian

childrearing text, his qualitative study of the childrearing practices in the Soviet Union and the United States revealed substantial dissimilarities. The central difference in the socialization processes of these two countries lay in the institution charged with the responsibility for the direction and oversight of this process. In the United States in the 1950s, the family was unquestionably the primary socializing institution; in the Soviet Union, this responsibility lay with the children's collective. This collective, that functioned in a regulatory manner, consisted of a group of multi-aged children and their teachers who progressed through the educational system together. Education focused not only on content but also equally on character training. The socialization process in the Soviet Union placed great emphasis on obedience and self-discipline; independence was literally shunned. Bronfenbrenner viewed this emphasis on conformity to imposed values as a possible weakness in that particular system.

With respect to the socialization process in the United States, Bronfenbrenner (1970) described schools as "central among institutions that encourage socially disruptive behavior" (p.152) primarily through the limiting nature of same-age grouping and the forced inutility of a child's abilities resulting in alienation, indifference, and antagonism. American families were described as encouraging excessive autonomy in their children. Failure to use constructive peer group experiences to develop in the child a sense of responsibility and consideration for others was also seen as a weakness in the normal socialization process as was the

absence of a single institution specifically responsible for the oversight of the child's total development.

Bronfenbrenner (1970) stated that "the worth of a society may be judged by the concern of one generation for the next" (p.1). He signaled the importance of the continual dedication of a significant person to a child during early childhood before the child moves outward as he matures to successively broader and larger social contexts called mesosystems. Each progressive context imposes its own particular rules and sanctions thereby influencing the child's educational and social development. These contexts may also offer an intergenerational aspect and may foster a sense of belongingness and purpose. According to Bronfenbrenner, the efficacy of models as reinforcing agents for children and of teachers as purveyors of information is dependent upon the adult's status and perceived degree of control over the child's environment.

In 1981, Belsky provided a transactional framework useful to the study of the effects of early experience in the family system. This model focused on the direct and indirect reciprocal influences of familial roles and relationships. Linkages in the family system were evaluated through the constructs of parenting, the marital relationship, and infant behavior and development. Through a combination of insights from the fields of developmental psychology and sociology of the family, a case was made for studying parent-child interactions not only within the context of the family system, but also within the broader social context.

The persistent under-representation of females in the field of mathematics provided the impetus for a study by Raymond and Benbow (1989). A quantitative survey of 510 intellectually gifted students (mean age was 13.7) who were participants in the Study of Mathematically Precocious Youth (SMPY) revealed that this gender difference in displayed talent intensified as precocity increased. Parental socialization patterns that reflected the communication of implicit gender-role stereotyping were identified as potentially negative influences on female math achievement.

An analysis of data from the High School and Beyond project sponsored by the National Center for Education Statistics of the USDOE resulted in the development of an explicit theory of parental involvement by Coleman and Hoffer (1987). Although parental involvement was identified as one of the most important factors in a child's educational success, the major contribution of their research was the conceptualization of parental impact as measured in terms of human and social capital. Human capital consists of levels of skills and knowledge; social capital refers relational abilities and actualities. Human capital is rendered impotent as a factor in a child's educational development in the absence of social capital or in the event that it is not perceived by the child as available (J. Coleman, 1987). The presence of high levels of human and social capital was indicative of greater academic achievement for children but only if the specific capital was actively applied in the home.

The absence of social capital was portrayed as either a structural deficiency which was a physical absence including maternal employment before the child entered elementary school or a functional deficiency which was an absence of a strong relationship between parent and child.

A second important conceptualization was that of embeddedness, defined by Coleman and Hoffer (1987) as the ensconcing of youth in enclaves of adults, most importantly with the parents, and then in surrounding adult communities represented in their study by religious organizations. This ensconcing allows youth to benefit from the social capital of adults. As an example of benefits derived from available social capital, time and effort spent by a family member on intellectual matters in early childhood was identified as the central factor in the development of several eminent individuals. Thus, Coleman and Hoffer identified parental involvement as a crucial factor in a child's academic achievement.

A recent study by Lam (1997) examined the interactive effects of family status and family process on children's academic achievement. Quantitative data was gathered from self-report questionnaires completed by 181 eighth graders from two mid-western inner-city public school systems, academic records, and telephone interviews with a parent of each student. Family status variables included family structure, ethnicity, size, education level, and SES; family process variables included degree of parental monitoring of child's activities and behaviors, degree of support and involvement in the child's education, and degree of psychological

autonomy-granting. A path analysis revealed that while the parenting style of intact families with a higher degree of SES was more authoritative than that of families with a lower SES, the adoption of such an authoritative parenting style may possibly overcome family structure variables that generally yield a negative effect on the determination of academic achievement.

Eccles and Harold (1993) developed a model depicting the interactive and cyclical effects of family and school influence on children's educational outcomes and development. The model focused on parent involvement as not only a predictor of child achievement, self-perception, and motivation but also as a product of parent, school, and child influences. Reflective of Belsky's (1981) interactive relational theme, these influences included exogenous factors, parent beliefs and behaviors, teacher beliefs and behaviors, and child characteristics.

Parental exogenous variables having global and pervasive effects on child development included the social and psychological resources available to the parent such as their social networks, their ethnic identity, their physical and mental health, their general coping strategies, time demands, and neighborhood resources and dangers (Eccles & Harold, 1993). Parental beliefs concerning perceptions of their role in the child's education, of their relationship with the school, of their own efficacy, and of the child's abilities and personality were also included. Based on work by Grolnick and Ryan (1989) dealing with children's achievement motivation,

parental behaviors were identified through socialization practices such as provision of structure in terms of rules and guidelines, support for autonomous behavior, and actual involvement in the childrearing process.

Exogenous variables of the community (cohesion, social controls, social networking, resources and opportunities, and undesirable or dangerous opportunities) were included due to the impact that community may have on the ability of families to implement their beliefs and to the extent that it may affect the quality of parenting (Eccles, 1993). Exogenous variables of schools were considered due to possible effects of the level of schooling, size, climate, opportunities for special program participation, and degree of support for parental involvement; exogenous teacher variables consisted of attitudes and practices with regard to the concept of parental involvement. Exogenous child variables such as age, gender, number of siblings, birth order, personality and temperament, and past performance were examined as well (Eccles, 1993). Inherent in the model is the concept of what Eccles and Midgley (1989) called stage-environment match. This reconceptualization of Hunt's (1975) person-environment-fit theory emphasized the effects of multiple transitions experienced simultaneously by children during certain developmental periods (e. g., early adolescence as a time of both pubertal changes and school level changes) on their educational outcomes. Although the model was based on a longitudinal study of motivation in adolescents, Eccles

(1993) suggested the efficacy of its application with younger children as well.

Parental Role

The Parent Role Development Model (PRDM) constructed by Mowder (1991a) provided a framework for examining parent role characteristics and parents' perceptions of that role. The elements of parent role are described in terms of complexity, development, and change. Functions of the parent role are bonding, discipline, education, general protection and welfare, responsivity, and sensitivity. Parental expectations of appropriate parenting behaviors vary according to specific developmental stages identified by Mowder as infant/toddler (birth-2), preschool (ages 3-5), elementary (ages 6-12), adolescence (ages 13-17), late adolescence (ages 18-22), and adulthood (age 23+). The parent role which is gradually shaped from early childhood undergoes continual modification due to the parent's own psychological growth, to the differing needs of the individual child, and to operative family dynamics as well as to the particular social-cultural context.

Mowder (1991a, 1991b) developed the Parent Role Questionnaire (PRQ) as a measure of parent role perceptions. Based on an analysis of parent role characteristics found in the professional education and psychology literature, Mowder devised a self-report instrument in which parents prioritized the six functions of the parental role (bonding, discipline, education, general protection and welfare, responsibility, and

sensitivity), responded to questions regarding the frequency of each function at specific stages of development, and responded to open-ended questions concerning each function. Following pilot studies, the PRQ was revised in 1990.

Results of a study done by Mowder, Harvey, Moy, and Pedro (1995) using the PRDM as the theoretical framework supported the concept of changing parental role and expectations according to particular developmental stages. The sample of 1,109 parents from a New England city had an average age of 40, was 83% female, included all SES levels, and reflected a 33% response rate. Further findings from written responses to the PRQ revealed global notions concerning childrearing practices. However, these global notions were most strongly present in earlier developmental stages with progressively less homogeneity apparent in later stages. There was less variation in the response of females and a higher importance rating of each function in the female response than in that of males. This may indicate an influence of gender on parent role perception with females viewing their roles as more demonstrative and involved while males appeared to exhibit moderation in these areas. The PRDM has as yet not been modified to reflect these findings.

Parental Educational Expectations and Aspirations

Instead of focusing on parental role, through a review of the literature on status attainment and the family as a learning environment,

Seginer (1983) developed a model of the course of parental educational expectations in which these expectations were depicted as both a cause of and an effect on children's academic achievement. Central to this model are the antecedents of parental expectations and the mediating factors of these parental expectations on academic achievement. These concepts serve to expand the link between parental expectations and academic achievement both in the direction of the origins of parental expectations and in the direction of the factors through which parental expectations actually affect children's academic achievement.

Three antecedents or determinants of parental educational expectations were identified as school feedback concerning a child's academic achievement; parental aspirations for their child in terms of educational achievement; and parental knowledge of their child's personality, ability, and behavior as well as knowledge of child development in general as it relates to educational achievement. The effect of school feedback of a child's performance on parental expectations was demonstrated in a study by Entwisle and Hayduk (1978) in which a decrease of parental expectations for their child's academic achievement occurred between first and second grades as a result of the child's first grade performance as indicated on his report card. Several theories indicate a significant relationship between a parent's own aspirations, particularly those unfulfilled, and aspirations that parents develop for their children; however, little empirical data is available

(Seginer, 1983). Seginer's element of parental knowledge combined both parental conceptions of child development and parental assessment of their child's development and achievement. In a study by Newson, Newson, and Barnes (1977), parents were shown to be adequate assessors of their child's intellectual ability. Several studies have shown that under certain conditions, however, parental conceptions may inhibit accurate predictions of achievement (Seginer, 1983).

Factors that mediate the influence of parental expectations on a child's academic achievement were defined by Seginer (1983) as achievement supporting behaviors, differential reinforcement, and the child's educational aspirations. Parental behaviors affect achievement both directly through goals and behaviors explicitly defined by parents for their children and indirectly through modeling and involvement in children's learning activities. The practice of differential reinforcement rewards conforming behavior and punishes undesirable non-conforming behavior in a manner meaningful to the child. Children's achievement aspirations are affected by peers, parents, and role models and in turn mediate the effect of parental expectations on academic achievement.

The influence of parents and peers on adolescents' career aspirations was the focus of a multistage longitudinal quantitative study by Davies and Kandel (1981). Seven hundred and sixty-two triads composed of a student, his parents, and his best friend allowed this influence to be relatively isolated. Parental influence was not only shown to be much

stronger than that of the best friend, but actual strengthened as the child matured. Implicit communication of parental expectations and aspirations was also identified in this study supporting that particular aspect of Marjoribanks' (1995) research.

In an effort to determine facilitators of the translation of a high level of parental aspiration for a child's academic achievement into actual academic achievement, Clark (1983) focused on family socialization processes as opposed to family compositional properties. Using case study methodology, Clark attempted to identify commonalities in the educational beliefs and practices of 10 low-income families in an African-American urban community. The intellectual climate of educationally supportive family systems included the use of both explicit literacy nurturing activities such as reading and implicit activities such as word games. Communication style consisted of direct instruction, feedback opportunities, and reinforcement techniques. The affective climate of educationally supportive family systems was characterized by supportiveness, demonstrated respect for the child's intellectual abilities, close supervision, and firm but not harsh discipline. Clark's resultant model of parental impact on academic achievement depicted the antecedent experiences and intergenerational effect on parental sense of efficacy and subsequent development of educational aspirations for their own children; the intellectual ability and personality of parent and child also directly influenced by prior familial and community contact patterns;

the structural and functional properties of the family; the quality of learning experiences in the home; and the opportunity structure for learning at school represented by teacher efficacy, school climate, and school-home contact patterns.

Children's Perceptions of Parental Educational Involvement

In a longitudinal study begun in Australia in 1977 with approximately 500 eleven-year old students, Marjoribanks (1995) attempted to assess the impact of children's perceptions of their family learning environments on their academic achievement. Family environments were defined as sets of conditions that affect an individual's life chances. These family opportunity structures consisted of parents' aspirations for their children measured in expected length of schooling and eventual occupation and of what Marjoribanks called parents' academic socialization measured by their demonstrated involvement in their children's education and by their encouragement of their children's independence and individualism. The impact of parental encouragement of individualism and independence was identified as a family press by Murray (1938).

This conceptualization of family presses as internal driving forces for parenting behaviors that in turn were perceived and experienced by children as external pressures significantly expanded the parental expectation construct. Marjoribanks (1994) considered a dynamic set of interactions that influenced children's learning outcomes. He described

these influences as embedded in environmental social structures and reflected by economic, intellectual, and social capital. More importantly, he regarded the child's perception of the environment as the key to the impact of that environment. This emphasis on the child's perception of his environment coupled with the concept of family presses has become the hallmark of Marjoribanks' work.

Current findings of this study showed a moderate to strong relationship between children's perceptions of their family learning environments and the development of their own educational aspirations. Children's perceptions of parental educational involvement with them and parental aspirations for them also functioned as a threshold for children's educational aspirations. These results further substantiated Marjoribanks' (1995) model built on both a situational model emphasizing the effects of the context of the child on educational outcomes and a classical trait model emphasizing the effects of personality on educational outcomes. Focusing on the relationships among family, school, and learning outcomes, this interactional model reflected parental involvement as an opportunity structure and student aspirations as a significant mediator in academic achievement.

Specific Process Model for the Development of Parental Involvement

Hoover-Dempsey and Sandler (1995) developed a causal process model of parental involvement based on the powerful effect of parental involvement on the educational outcomes of children and the self-efficacy

theory of Bandura (1977). This model identified three factors affecting the relationship between parental involvement and the educational success of their children. First, factors affecting the parental decision to become involved in their child's education were considered. Rather than focusing on family status variables which serve as indicators of parental involvement but not as explanations for parental involvement, it was the parent's personal conception of his role in his child's educational process that was the point of entry in their study. Influencing this parental role construction were personal experience, observation of others, and a sense of efficacy for assisting the child educationally. The involvement decision was also affected by the openness of the child and/or the school to such involvement.

The second factor affecting the relationship between parental involvement and the educational outcomes of children addressed the active choice of a particular form of parental involvement. Hoover-Dempsey and Sandler (1995) suggested that this choice was determined by the interaction of several variables. The skill and knowledge possessed by the parent contributed to setting parameters for the involvement form. The balance of the desire for and capacity for involvement with other familial and personal demands also served to delimit involvement. Other variables affecting the choice of a particular involvement form were specific requests from the child and/or the school.

The third factor affecting the relationship between parental involvement and the educational outcomes of children involved methods employed either intentionally or unintentionally by the parent to influence the child's educational outcomes (Hoover-Dempsey & Sandler, 1995). These mechanisms of influence included the modeling of desirable educational behaviors and attitudes, the reinforcement by the parent of the child's behaviors that would potentially increase school-related success (such as the supervision of homework assignments and an emphasis on daily attendance), and the use of direct instructional methods by the parent. Both closed-ended instruction that promoted factual learning and open-ended instruction that aided in the development of higher level thinking skills were considered.

Hoover-Dempsey and Sandler (1995) proceeded to identify two conditions that affected the impact of these mechanisms of influence on a child's educational outcomes. The first tempering variable was the use of developmentally appropriate involvement strategies by the parent. The agreement between the choice of a specific involvement form by the parent and the expectations of the particular school was seen as a tempering variable as well. The relative impact of these tempering variables and the mechanisms of influence was highly dependent upon the child's perception of these conditions.

The parental involvement model culminated in the varying effects of parental involvement on child outcomes. In the cognitive domain, specific

learning as reflected in knowledge and the learning of behaviors conducive to educational success as reflected in the acquisition of skills were indicated as outcome measures. The affective component was measured by the child's sense of efficacy for school-related success. Hoover-Dempsey and Sandler (1995) stated the following

We suspect that parental involvement - as tempered or mediated by conditions specified below - is most significant in enabling children's accomplishments in skill and knowledge areas where children may be struggling to achieve, and in enabling progress when children come to a roadblock in learning that interferes with continued progress. Under these conditions, when the normal teaching and learning processes of the classroom are insufficient in themselves to create learning, the enabling and enhancing functions of parental involvement may become critical to children's educational success. (p. 322)

Summary of Parental Involvement Studies

In his classic study of the socialization process, Bronfenbrenner (1970) drew what may well become classic conclusions. The steadfast commitment of an adult to a young child as the child is socialized first in the family and then through progressively complex mesosystems is perhaps the salient feature of his work. That these mesosystems may foster a sense of purpose and belongingness in the child is significant.

Also of consequence may be both the indication that a single institution need bear responsibility for the oversight of a child's total development and the implication that educational institutions may unwittingly contribute to undesirable socialization patterns.

The PRDM (Mowder, 1991a) took a much needed look at parental role conceptualization. The key elements of the parent role model (complexity, developmental stages, and change) provided a solid foundation for study of this construct. A missing component, however, may be the origin of the construction of the parent role as identified by Hoover-Dempsey and Sandler (1995) based on the self-efficacy theory of Bandura (1977). While the PRQ is a useful instrument and has fairly good validity scores, it should be noted that the pilot study employed a convenience sample of graduate students who were largely female, unmarried, and non-parents. The makeup of a sample using a revised version of the PRQ remained largely female. The PRQ might be strengthened by the use of a sample equal in both gender distribution and age of child distribution. Measurement of societal changes over the last two decades with respect to gender role may also be enlightening.

Seginer's model (1983) of the course of parents' educational expectations made an important contribution to the study of parental involvement with the addition of consideration of antecedents of parental expectations and mediators of parental expectations on child educational outcomes. In describing future research that might evolve from the model,

Seginer suggested looking at parents as teachers in terms of their effects on the cognitive processes of the child. Missing in the model was the inclusion of child characteristics other than aspirations that might be seen as either an antecedent or a mediator of parent expectations. Also absent was the inclusion of the community and school contexts (other than school feedback on child achievement) as antecedents and mediators.

The richness of Marjoribanks' (1995) model lay in the introduction of both the importance and the impact of a child's perception of his learning environment on educational outcomes. The child's individual characteristics were also considered. However, the model does not reflect the impact of the family on the child's educational outcomes to the extent to which such a role was reported in the study; it also fails to expand the concept of community influence beyond consideration of class, ethnicity, and economic and social capital.

Eccles' (1993) and Eccles and Harold's (1993) strong contributions centered on the detailed amplification of the range of child personality characteristics, of child outcomes, of the contexts of parent and family, and of the contexts of teacher and school. Additionally, the identification of parental involvement as a product of reciprocal influences of parent, child, and school instead of merely a predictor of educational achievement expanded that construct. The model did fail, however, to address the manner in which parents' educational beliefs affect parenting practices;

nor were the effects of children's perceptions of their environment considered.

With the development of their parental involvement model, Hoover-Dempsey and Sandler (1995) significantly advanced the parental involvement construct. Key components of that contribution are factors affecting the parental involvement decision, factors affecting the parental involvement form, and specific mechanisms through which parental involvement influences child outcomes. Consideration of the child's perception of a mechanism of influence as a tempering variable is an important feature. The model, however, does not directly address either the interactive nature of parent-child socialization or the impact of child characteristics on the parental involvement decision, on the parental choice of involvement forms, and on the parental mechanisms of influence and concomitant tempering variables. The model also fails to consider child outcomes apart from cognitive skills, knowledge, and affective sense of self-efficacy in school. A domain unmentioned yet potentially influenced by parental involvement practices is the realm of additional accomplishments either within or outside of the school setting such as athletic performance, dramatic and musical performance, or literary endeavors.

By combining key features of the first five models with the significant aspects of the Hoover-Dempsey and Sandler (1995) model, a fuller conceptualization of parental influence on child educational

outcomes might be forged. Hoover-Dempsey and Sandler's parental role construction might be expanded by including Mowder's (1991a) three elements and six descriptive aspects of the parental role. More complete understanding of effects on educational outcomes might be developed by including Seginer's (1983) aspect of parent and child aspirations and Marjoribanks' (1995) concept of a child's perceptions of his learning environment. The inclusion of Eccles' (1993) expanded list of child outcomes and consideration of the effects of child personality on the parent-child relationships might also be productive. The inclusion of Albert's (1991) aspects of focal relationships and crystallizing experiences as mediators of educational outcomes might further enhance the model Hoover-Dempsey and Sandler as well.

Home Education

Home education is a form of education in which the family maintains the primary responsibility for the education of its young. It is an education that occurs primarily in the home with the mother often functioning as principal teacher. Although home education has been practiced in the United States since the beginnings of our nation, it has experienced an unparalleled resurgence in the last quarter of a century evolving from a growing trend in the 1980s into a firmly established movement. At the start of a new century, an estimated 1.5 million children were being home educated comprising over 1% of all school-age children

(NCHE, 2000). It is expected that the movement will continue to experience at least a 15% annual growth rate with no obvious slackening in sight (Ray, 1996). Home education, with varying regulations not only among states but from district to district, is now legal in all 50 states and is spreading internationally as well.

Research in the relatively new field of home education has developed in four readily discernable phases (Cizek & Ray, 1995). Studies in this review will be grouped according to descriptions of home educators, motivational factors in the choice of home education, cognitive outcomes of the learners, and affective outcomes of the learners and will be treated chronologically within groups starting with the earliest research. The two seminal studies of home education conducted by Ray (1990, 1997) and Rudner (1999) as well as the study by Havens (1994) reported findings in more than one of the research phases. These studies, therefore, will be revisited in each of the appropriate phases. A fifth section will include those studies of special significance to the education of high ability learners.

Five studies not reviewed due to topics that were deemed outside the purview of this review assessed media coverage, the number of children participating in home education in the late 1980s, instruction of home educators by educational professionals, propriety of programmed instruction, and various forms of support available to home educators.

Descriptions of home educators

The general characteristics of families involved in home education were first studied on a national level by Ray (1990). The application of linear systematic sampling with a random starting point to the membership list of the Home School Legal Defense Association (HSLDA), the largest home education membership organization, produced the sample. A survey mailed to 2,163 families resulted in a 70% response rate from 1,516 families representing 4,600 children, 3,096 of which were engaged in home education at that time. Information gleaned from these families provided a baseline for a longitudinal study and a comparison for future work by other researchers. From his descriptive causal-comparative study, Ray discovered that the size of families involved in home education was 64% larger than the average 1988 family. Nearly all the respondents described themselves as born again Christians (93.8% of fathers; 96.4% of mothers). Single mothers represented 1.6% of respondents; there were no single father respondents. The large majority of daily teaching was provided by the mother (88%) with an average of only 10% provided by fathers and 2% by adults outside the family. Computers were in the homes of about 50% of the families. Nearly one-half of parents had completed at least four years of college. Six percent of fathers had teacher certification as did 13.9% of the mothers. Median income ranged from \$35,000 - \$49,999 with 82% of the families reporting income of \$20,000 - \$75,000.

Only 10.6% of the mothers worked outside the home at an average of 14.6 hours per week.

The descriptive study of structural and interactional aspects of families participating in home education by Allie-Carson (1990) added a new dimension to general characteristics of home educators. The sample, obtained from home education organizational membership lists and a snowball sampling method, consisted of 25 families from Oklahoma who had at least one child between the ages of six and 12 and had been participating in home education for at least one year. Twenty-four of the adult participants were female. They were primarily from rural areas, highly educated, 24-42 years old, and had been participating in home education for three or four years. Based on family systems theory, family cohesion and adaptability levels were assessed through the administration of FACES III (Olson, Candyce, Sprenkel, & Douglas; 1980). Demographic information was collected; parental attitudes toward home education and conventional educational systems were explored through the construction of semantic differential scales in a questionnaire format. The majority of these families scored high in adaptability and cohesion. According to Allie-Carson

they appear to have been able to achieve a kind of dynamic equilibrium between stability and change . . . suggesting the presence of stabilizing forces within homeschool family systems which allows most of these families to accommodate higher levels of both adaptability and

cohesion than the population of families whose children are more conventionally schooled. (p.17) The presence of family consensus regarding its structure and function and/or greater levels of control over the socialization and education of their children were possible stabilizing forces in these home schooling families.

Demographic information from a study done by Havens (1994) which will be described in the section dealing with cognitive outcomes appeared consistent with Ray's (1990) findings. The primary teaching responsibilities were performed by mothers in 36 of the 38 families although all fathers were involved in some capacity. Most of the fathers (75%) had professional jobs; nearly one-third (11) of the mothers were certified teachers. Thirty-eight percent of the families reported an income between \$18,000 and \$34,000; forty-three percent reported earnings over \$50,000.

Mayberry, Knowles, Ray, & Marlow (1995) conducted a study of who parent educators were and why they chose to engage in home education. A unique feature of this study was the survey of public school superintendents' perceptions of home education. This will be addressed under the heading of affective outcomes. Also unique to this study was the acquisition of the mailing lists from public school officials. Other mailing lists were obtained from home education organizations representing disparate philosophies. The first phase consisted of a 56-item questionnaire mailed to 6,064 home educators in Washington, Utah, and

Nevada that resulted in a 25% response rate typical of home education research. Thirty-six families, 12 from each of the three states, were selected through dimensional sampling for in-depth, semi-structured interviews.

In general, findings confirmed earlier nationwide baseline descriptive research. All but two percent of the respondents were Caucasian; all but three percent were married; and 78% of the mothers were not employed outside the home. Reported income levels were nearly identical although fewer college graduates were found (33% as opposed to 42% in Ray's study) as well as fewer professional fathers (42% as opposed to 75% in Havens' study). However, these researchers (Mayberry et al.) went beyond the common characteristics in an attempt to more fully describe all respondents. While over three-fourths of the respondents reported church attendance at least weekly and acknowledged an external source of authority, several New Age followers reported an internal source of authority, and 12% of the respondents failed to respond to the religious orthodoxy segment. Politically, even though Republicans represented 76% and Democrats represented only 7%, a majority of parents registered skepticism of large-scale institutions such as public education, banks, organized labor, and the press and distrust of the military, organized religion, and the Supreme Court. Such skepticism was unsterotypical of politically conservative adults.

In the first published longitudinal study of home education, Ray (1997) explored changes in basic family demographic variables as well as the relationship between these variables and academic achievement and social activities. These relationships will be discussed in the appropriate sections. The 1,657 participant families representing 5,402 children included 275 families from the earlier study; however, the new participants for this study were chosen by linear random sampling from the mailing lists of other major home education organizations in an effort to secure a more accurate representation of the target population. The survey was revised to include selected items from the 1990 National Assessment of Educational Progress (NAEP) and National Education Longitudinal Survey (NELS) studies as well as questions concerning the supportiveness of grandparents. Multigenerational findings revealed 66% of grandparents were supportive; eleven percent were opposed to home education. Findings concerning family demographic variables of race, marital status, income, employment outside of the home of the mother, religious beliefs, parental educational level and certification, and number of children were consistent with Ray's baseline research in 1990. However, the average number of years children participated in home education was approximately twice that of Ray's previous study. Also of note was the indication that 76% of parents intended to continue the home education of their children through grade 12. These findings led Ray to conclude that

many parents were attempting to build strong families by spending large amounts of time in the home education of their children.

The second seminal study of home education also examined the relationship between basic demographic characteristics of home educators and educational achievement of children who participated in home education (Rudner, 1999). Three features of Rudner's research serve to make it perhaps the most critical study in the field of home education to date. First, the sheer number of participants allowed for the possibility of broader generalizations of the findings. Demographic surveys as well as Iowa Test of Basic Skills (IOWA) and Test of Academic Proficiency (TAP) achievement test scores were collected from families of 20,760 children of relatively equal gender distribution in grades K-12 from all 50 states who had used Bob Jones University (BJU) Press Testing Services in 1998. Secondly, unlike any previous home education research, parents consented to participate in the study before knowing the results of their children's achievement testing. Third, and perhaps most importantly, Rudner, director of ERIC Clearinghouse on Assessment and Evaluation under the USDOE and whose children attend public schools, was not personally a participant in the home education movement and, as such, was less likely to be biased toward a favorable outcome. While this in no way implies a lack of integrity, scholarship, or validity in the work of other researchers who are home educators, it does offer an alternative

measure to those who might attribute untoward bias to studies done by proponents of home education.

The general portrait painted by previous researchers remained virtually unchanged. The participants were generally Caucasian (95%), married (98%), middle class (with a median income of \$50,000 as opposed to the national average of \$36,000), religious families in which the mother remained at home (77%) with more children than the national average (62% of the families had three or more children as opposed to the 20% national average). Rudner did find a higher percentage of parents with at least a college degree (66% of fathers as opposed to Ray's 46%; fifty-seven percent of mothers as opposed to Ray's 42%). The national average for parents who have at least a college degree is about one in four for fathers and one in five for mothers (Rudner, 1999). Also found were a larger number of mothers with teacher certification (20% as opposed to Ray's 15%). When added to the 7% of fathers who also had teacher certification, Rudner estimated that one out of four children were being taught by a parent who had completed teacher training. The bulk of Rudner's findings and conclusions will be discussed in the section on cognitive outcomes.

A recent study by Barna Research Group (2001) offered a strikingly different description of families participating in home education with respect to racial and ethnic background. Conducted over a 19-month period, a total of 7,043 randomly selected adults from across the nation

were surveyed by telephone. Surprisingly, although only 34% of the U.S. population were classified as non-white, this population group represented the majority of households that engaged in home education. Fifty-nine percent of the respondents were evenly divided between Hispanic and African-American groups. In addition, although about one-half of the respondents could be classified as politically moderate, contrary to other research, only about 15% professed to be religiously conservative evangelicals.

Motivational factors in the home education choice

The identification of the majority of home educators secured, several researchers sought to discover the motivations behind the choice of home education. Although few in number, each of the following studies made a unique contribution to the discussion of why parents chose to engage in home education.

Van Galen (1986) conducted a qualitative study in order to determine the ideological frameworks of home educators and the social contexts of these frameworks. Information was collected through participant observation at state, regional, and local home education meetings over an 18 month period; through interviews with 23 home educators representing 16 families that were selected to include a range of socioeconomic backgrounds; through interviews with representatives of several public education lobbying groups; and through document analyses

of home education newsletters, books, press releases, and files of court cases. While Van Galen did not offer compelling conclusions, she did create a useful nomenclature for further discussions of parental motivation. From a constant-comparative analysis of this data, two broad ideological frameworks emerged. Van Galen described the Ideologue as one who perceives home education as a parental responsibility imposed by God. For such parents, the family is the most important societal institution. Home education serves to strengthen this familial bond through a focus on appropriate academic content and character training. These conservative Ideologues object to the content of education in conventional schools. For the Pedagogue, the primary issue is not the content of what is taught but rather the methods utilized. As a response to a perceived insufficiency of conventional educational methods, these independent parents are not reacting to an imposed responsibility but rather are living out their conceptualization of individual responsibility for the education of their children.

Lest survey research with a low response rate be dismissed as an ineffective means of discovery, Resetar and McCown (1987), using a mailed survey instrument with a response rate of 25% (an average rate for home education research), determined that specific reasoning for home education may occur in stages and may undergo change over time. Only one-third of the respondents reported choosing home education in order to provide their children with the best possible education. Yet, when asked

why they continued to engage in home education, over one-half of the respondents stated that they could provide their children with the best possible education. Of those who experienced a change in their reasoning for the continuation of home education, 84% had at least two years of home education experience. Of those whose reasoning remained unchanged, over one-half had less than two years experience. According to the authors, home education choice "may be a function of the amount and type of home schooling experience they have had" (p. 2). If this is true, any study attempting to categorize parental motivation in home education without assessing the possibility of change may fail to capture a full conceptualization of motivation construct.

This concept of change in parental motivation in home education was reiterated by Gray (1992). His quantitative study of ten home educators revealed a group demographically not unlike previous studies. Although a conflict in values between conventional schools and parents was identified by about one-half of the parents as the primary reason for choosing home education, many reported continuing home education in order to enhance growing family unity and positive socialization. Interestingly, despite a diversity of motivational factors influencing the choice of home education, these parents shared a common lack of faith in the effectiveness of public education.

Havens' (1994) study, introduced in the previous section, revealed that nearly all the 38 sets of parents believed they were called by God to

teach their children at home. The majority of the parents desired to teach Christian principles to their children. Other reasons given for the choice of home education were the promotion of family unity, avoidance of negative peer pressure, and provision of physical protection.

A study of home educators from various ideological backgrounds nearly ten times the size of any previous study of parental motivation was conducted by Mayberry, Knowles, Ray, and Marlow (1995). In addition to the number of participants, a unique feature of this study was the manner in which the participants were selected. Names and addresses of home educators were procured from public school superintendents in three northwestern states. In an effort to enhance generalizability of findings, membership lists from home education organizations with varied ideological foundations were also utilized. Supportive of Van Galen's (1986) conclusions and of Gray's (1992) findings, the two motivating factors for home education choice which surfaced were the transference of religious values and the creation of an effective learning environment. Two-thirds of the parents listed the transference of religious values to their children as the primary motivating factor while one-third ranked the provision of a more effective learning environment as most important. Similar to Gray's (1992) finding of a lack of faith in public education, Mayberry et al. found a commonality between these two groups in their strong desire for autonomy. All expressed concern about parental and family rights in the determination of children's education and socialization

opportunities; there was a shared distrust of large-scale institutions as well. The authors concluded that such beliefs were authenticated in a decision to reject public educational institutions.

Cognitive outcomes

The third phase of home education research saw a shift in focus from the parents to the students themselves. While continuing the attempt to track the “who” and “why” questions of home education, the chief concern now became the academic achievement of children who participated in home education. Again, relevant studies will be considered primarily in chronological order, the exception being that several studies based on the same data will be discussed together.

In an effort to study the effects of increased parental contact on academic achievement, Delahooke (1986) compared the academic achievement of 32 students from a private school with 28 students who were engaged in home education. Over a four month period, each of the 9-year-old students of similar intelligence and SES completed the Wide Range Achievement Test – Revised (WRAT-R) as a measure of academic achievement, the Wechsler Intelligence Scale for Children – Revised (WISC-R) as a measure of intelligence, and the Roberts Apperception Test for Children (RATC) as a measure of perceptions of common interpersonal situations. All tests were administered in the child’s home by the researcher. Contrary to the author’s hypothesis that the increased

parental involvement implied in home education would result in higher scores for these children, group comparisons yielded no significant difference in academic achievement based on school setting. Based on WISC-R scores, however, both groups had lower WRAT-R scores than had been expected.

In one of the earliest published studies, a cooperative effort by the Washington Homeschool Research Project made possible the gathering and dissemination of objective information about children educated at home (Wartes, 1990a & 1990b). Several testing services in the state of Washington provided sets of Stanford Achievement Test scores (SAT-7) for each student engaged in home education who was tested between 1986 and 1989 resulting in 2,911 sets of scores. The Stanford Early School Achievement Test (SESAT) was used for students at the kindergarten level; the Test of Academic Skills (TASK-2) was used for students in grades 9-12. In each of the four years for which scores were reported, the median composite score of all students was between the 65th and 68th percentile placing the students above the national norm. Only three of the median scores for all grade levels during the four year period fell below the 60th percentile; all of these medians were at the third grade level with the 53rd percentile as the lowest score. Wartes (1990a) concluded that home educated students in Washington at that time had not been at an educational disadvantage compared to their conventionally

educated counterparts; however, scores of conventionally educated students in Washington were not included in the report.

From 1987 to 1989, these same testing services agreed to administer a questionnaire provided by the Washington Homeschool Research Project (WHRP) to parents while their children were undergoing the SAT testing. All questionnaires were then forwarded along with the test results to WHRP resulting in 877 useable pairs of parent questionnaire and child test scores which formed the basis for correlational analyses of nine items (Wartes, 1990b). Parent education level, family income, the amount of structure, and the number of hours of academic learning time per week all resulted in a weak positive relationship with student achievement test scores; yet children whose parents had at best a high school education and children whose parents had reported income at less than \$15,000 still performed at the 60th to 62nd percentile. The average score of children who had no contact with certified teachers was at the 70th percentile. Although statistically not significant, children with at least one parent who had teacher certification did score better than students whose parents did not have teacher certification. Wartes suggested that this difference may be due to parental education level as opposed to teacher certification.

For those children with previous conventional schooling, a positive moderate relationship was found between parent-reported test scores from that period and test scores occurring during the home education

period. Interestingly, an overwhelming majority of these students had been performing well in conventional schools. No significant difference was found between student achievement test scores and amount of religious content, student grade level, number of years of home education, and student gender. However, the issue of gender was addressed only in the 1989 data. Although males outperformed females in science scores (86% as compared to 72%), and females outperformed males in total language scores (73% as compared to 59%), it may be important for educators of high ability learners to note there was no significant difference in total math scores according to gender. Consideration of the above results led Wartes to conclude that most criticisms of home education with regard to student academic achievement were unconfirmed.

Russell (1994) used both the data and the independent variables with the exception of gender from the Wartes' (1990a & 1990b) studies to measure their effects upon academic achievement through cross-validation and the use of path analysis. A slight positive effect was reported for the amount of structure present in the home education context but was deemed inconclusive due to the unclear nature of structural assessment. Parent education level was found to be the best although yet weak predictor of academic achievement yielding a 3.2 percentile increase in the average student score per additional year of parent education. Russell maintained that the findings of his study were supportive of

Wartes' (1990b) conclusion that no single variable under consideration had a marked effect on student achievement.

Richman, Girtten, and Snyder (1990) attempted to replicate Wartes' (1990b) study using a different achievement test at a different time of year in a different state. Using the California Test of Basic Skills (CTBS), a total of 171 children engaged in home education between the ages of 7 and 17 were tested in Pennsylvania in the fall of 1989. While the total reading and math scores were much higher than those reported in Wartes' (1990b) study (86th percentile and 73rd percentile respectively in Pennsylvania as opposed to 64th percentile and 53rd percentile in Washington), the relational effects of the independent variables upon student achievement scores were similar. Only parent education and income demonstrated a positive but weak effect. Once again, there was no significant difference in math scores with respect to gender. Richman, Girtten, and Snyder concluded that the findings of their study supported Wartes' findings. Furthermore, they indicated that such findings were not supportive of any policy decisions limiting home education participation due to income level, parent education level, teacher certification, or structural requirements (e.g., number of days of instruction); nor were such findings supportive of criticisms that either gender may be at risk.

In the first nationwide study of the academic achievement of students who participated in home education introduced in the first section, Ray (1990) also examined the achievement test scores of 3,096

students. These students in grades K-12 who took the Iowa Test of Basic Skills (ITBS), California Achievement Test (CAT), or Stanford Achievement Test (SAT) series performed at or above the 80th percentile on all subtests. A statistically significant but slight relationship between the number of years of formal education of the parents and student achievement scores (less than 4% variance) was reported. No significant difference was found between teacher certification and the total achievement test scores of students. The relationship between income and student achievement scores was not significant for total reading and language scores. Students from families with incomes of at least \$50,000 scored better in math than those from families and incomes of less than \$10,000; however, all students scored at or above the 60th percentile. There was, once again, no significant difference of Total Math scores with respect to gender. These findings do not support assertions that children engaged in home education are academically at-risk if parents have not received post-secondary school formal education, have not received formal teacher-training, or are in a low-income bracket.

In order to address concerns regarding the ability of the majority of home educators who expressed a religious orientation to adequately educate their children, Ray (1991) looked at the effect of parental religious orthodoxy on student achievement scores. Conceptually, he built on both Zern's (1987a, 1987b) studies of college students' religiosity and their academic performance and Coleman and Hoffer's (1987) study of public

school and private Catholic schools. Zern (1987a) posited that cognitive functioning was enhanced by obedience to parental or other societal norms. Zern (1987b) concluded that "religious involvement at any level seems to provide the motivation and/or structure necessary to maximize accomplishments given one's inherent abilities" (p. 894). Statistically, using data from the Wartes' (1990b) study to perform multiple regression analyses, Ray reported no significant relationship between parental religious orthodoxy and student academic achievement even though both the parental orthodoxy and student academic achievement were above average.

Havens' (1994) study, also introduced in the first section, was designed to determine academic growth and effects of parent education level and teacher certification on their children's achievement scores. Applying a criterion previously unexplored in home education settings, questionnaires were mailed to 10% of home education support group leaders listed in a Texas publication as well as six additional home education support group leaders in Texas. The 25% return rate, which appears to be an average return rate for mailed surveys conducted with home educators, resulted in 38 families self-described as Christians which consisted of 61 students (25 boys and 36 girls) between grades two and eight. These children had taken the Stanford Achievement Test (SAT) at least twice, the first administration occurring before home education had

begun. The paired scores formed the basis for comparison for each individual.

On each of the 18 subtests of the SAT, the statistically significant scores of students educated at home ranged from two to six grade levels above their age-appropriate grade level. Students at the seventh grade level performed between 5 and 6 years above age-appropriate grade level. Multiple t-tests were employed using scores obtained during conventional schooling or at the beginning of home education and SAT scores obtained after at least one year of home education. Again, on each of the 18 SAT subtests, significant academic progress had occurred since home education had begun. Havens concluded that the students educated at home in her study were not academically disadvantaged as they appeared to have made significant academic advances. The unique learning environment which could potentially yield more positive interaction between parent(s) and children, more exploratory study, and a more individualized educational plan were offered as possible explanations for the academic achievement of students participating in home education.

Findings with regard to parent characteristics appeared to be consistent with Ray's (1990) findings and his conclusions. There was no significant difference between either parent educational level, including even those who had not completed high school, or parent certification and the academic achievement of their children. Again, it appears that possibly

neither a specific parent education level nor previous teacher training is necessary or a child's academic achievement.

In the mid-1990s, a shift from the question of how well children participating in home education were doing on academic achievement tests to why they were doing so well may be discerned. Scholastic aptitude, academic self-concept, and pedagogical practices as predictors of academic achievement in children educated at home as measured by SAT, 8th Edition scores were the focus of a study by Medlin (1994). Thirty-six children in grade 3 through grade 6 from 27 families were given the Otis-Lennon Scholastic Ability Test, 6th Edition (OLSAT) in order to measure scholastic aptitude and the Piers-Harris Children's Self Concept Scale (PHCSCS) in order to assess academic self-concept. Their parents completed a questionnaire related to pedagogical issues. While scholastic aptitude scores were near average, self-concept and academic achievement scores were above average. In contrast to earlier studies, Medlin found aptitude and achievement scores both positively related to parent education level and teacher certification of the mother. The parental pedagogical practices of less direction instruction, shorter academic year, and the use of non-graded testing and fewer rewards were all related to an increase in achievement test scores leading Medlin to conclude that academic achievement may possibly be enhanced by a less structured approach.

That the content and administration of a group achievement test may be neither an accurate nor a valid reflection of individualized home education curriculum prompted Boulter and Macaluso (1994) to attempt to demonstrate the validity of Woodcock-Johnson-Revised (WJ-R) as an individual measure of academic achievement. With regard to the current academic achievement of 28 children in grade 1 through grade 9 in North Carolina as measured by the WJ-R, above average or average performance was reported on all but the dictation and the humanities subtests. Concurrent validity was assessed by matching scores of subtests of the WJ-R with appropriate subtest scores of the previously taken SAT. While all correlations were positive, Boulter and Macaluso viewed their attempt as only a beginning step in the commendable quest for more accurate academic achievement assessment measures for children educated at home.

Galloway and Sutton (1995) attempted to assess the effectiveness of home education by examining its products as measured by the performance of college students who had participated in home education. In order to determine whether these students could succeed in a post-secondary residential environment, freshman English test scores and grades and ACT composite scores of 180 college students at a large Christian southeastern university were compared. Students had been selected according to their previous high school setting of either public education, private Christian education, or home education. The only

significant difference revealed by a multivariate analysis of variance was that the mean ACT scores and English test scores of former home education students were higher than those of private Christian school students. Galloway and Sutton concluded that to the extent that ACT scores and freshman English grades were valid predictors of college success, both home education students and students educated in public schools shared the same likelihood of collegiate academic success; home education students may possibly be more likely to succeed, however, than those educated in private Christian schools. According to Galloway and Sutton, the promise of academic achievement at the college level for students who were involved in home education seems to compliment the findings of satisfactory elementary and secondary level academic achievement of students engaged in home education.

Based on data from Ray's (1997) nationwide longitudinal study previously described, Ray (2000) sought to compare the academic achievement of students engaged in home education in the mid-1990s with their performance in 1990 and also to determine if selected background variables were significantly related to the academic achievement of these students. The average complete battery score of the 87th percentile was not significantly different than the 1990 score of the 86th percentile. As in 1990, the lowest average score in any category was again at or above the 80th percentile. Using the entire sample of his 1997 study, comparison testing on the effect of the degree of regulation by the

state, the professional identity of the test administrator (whether public, private, home educator, or other), and the use of computers yielded results of little to no effect on academic achievement.

Multiple regression analyses were conducted using twelve other background variables. Seven of these variables not found to be significant in terms of academic achievement included teacher certification of the father, teacher certification of the mother, family income, expenditure per pupil, amount of time engaged in formal instruction, legal status with regard to home education, and the age of the student when home education commenced. The five independent variables found to significantly relate to academic achievement were education level of the father, education level of the mother, gender, number of years student was educated at home, and the number of visits to a public library. Gender, when combined with the education level of the father and the education level of the mother, amounted for 5.5% of variance favoring males in total math scores. Consideration of these three variables and the number of years of home education accounted for 7.0% of variance favoring females in total language scores. The highest degree of variance for any single variable was the 5.0% variance reported for the education level of the fathers with respect to the total battery score. Ray concluded that in terms of academic achievement, home education had been successful. Regarding the findings of the relationship of several background variables to academic achievement, Ray surmised that

This work . . . might suggest that there is something inherent in the modern practice of home education that could (or does) ameliorate the effect of background factors that are associated with lower academic achievement when students are placed in conventional public schools. (p. 99)

One of two seminal studies focusing on home education was conducted by the director of the ERIC Clearinghouse on Assessment of Evaluation (Rudner, 1999). The largest study to date, Rudner's sample included 11,930 families from all 50 states and 20,760 children in grades K-12 with relatively equal gender distribution. Achievement test scores from the appropriate ITBS and TAP taken in 1998 were obtained from BJU Testing Service. Parental permission was obtained before the tests were administered.

Students engaged in home education were reported to be proportionately younger than the general school population with only 11.4% of the these students in grades 9-12 as opposed to 30.3% of the general school population. Possible explanations for this demographic difference were the relative newness of the home education movement, the decision of some families to place their children in a conventional high school, the number of students who chose to take college entry examinations instead of the TAP, and finally, the number of home education students who completed secondary education earlier than conventional school students.

Rudner pointed out that the ITBS series was designed to be in close alignment with public school curriculum; its alignment with home education curriculum has not been determined. Also, it is important to note that a full 25% of the students took a test that was on average one to two grade levels above their appropriate age placement. Despite alignment issues and above-grade level testing by more than 5,000 students, Rudner described the academic achievement of the home education students as exceptional and well above both public school and Catholic school students for every subtest at every grade level. Academically, home education students scored on average from one to four grade levels above public school peers, the gap widening as grade level increased. Students in first grade averaged in the 91st percentile while those in grades 2-12 averaged in the 76th to the 90th percentiles yielding an overall student average in the 82nd percentile. Reading scores reflected a fairly consistent increase from first to twelfth grades (88th to 92nd percentiles); language scores experienced a sharp drop from first to third grade (82nd to 62nd percentiles) and then a slow, steady recovery (85th percentile at twelfth grade). Math scores, however, reflected a steady decrease from 81st percentile in first grade to 66th percentile in twelfth grade. Those students who had been exclusively educated at home scored significantly higher than students who had previously attended conventional schools.

Teacher certification of parent(s) was found to have no significant effect on academic achievement at any grade level; similar results were

reported with respect to the use of pre-packaged curriculums and student gender. A significant effect on academic achievement was indicated for four background variables. Consistent with National Assessment of Educational Progress (NAEP) findings, the amount of television viewing time varied inversely with academic achievement with the effect being more pronounced at higher grades. While NAEP reported that nearly 40% of its fourth grade sample watched television 4 to 6 hours per day, Rudner found that only 2% of his sample reported more than 3 hours viewing per day.

Expenditures per pupil significantly affected academic achievement in two ways. First, at almost every grade level, better scores were reported for per pupil expenditure of more than \$600 when compared to per pupil expenditure of less than \$200. However, for 72% of the students, per pupil expenditure was less than \$600; the median per pupil expenditure was \$400. Secondly, the expenditure per pupil significantly affected academic achievement with respect to grade levels; there was a greater effect at upper grade levels.

A somewhat similar significant relationship was found with respect to income. Median income was reported to be \$52,000 as opposed to the \$36,000 national median. Academic achievement varied directly with income with the increase becoming more pronounced at higher grade levels.

Parent education level was found to significantly affect academic achievement. An increase in parent education level resulted in a concomitant increase in academic achievement level. However, students whose parents were without a college degree still achieved a mean performance (largely in the 65th to 69th percentiles) distinctly above the national average.

Rudner (1999) warned that his sample may not be truly representative of the target population and may instead reflect a select population of home educators in traditional family settings with above-average income and education levels that chose to use the services of BJU Testing Service during the time period studied (Welner & Welner, 1999). He stressed that such high achievement cannot be directly attributed to the type of school and is not evidence of the superiority of home education over more conventional education. Also, it cannot be taken as an indication that the academic achievement of any particular conventionally educated student would improve if home education were employed. While acknowledging that, due to the large number of home education students who were tested above age-appropriate level, the findings reported in his study “probably underestimated [academic] achievement” (p. 30), Rudner’s cautious conclusion was that “those parents choosing to make a commitment to home education are able to provide a very successful learning environment” (p. 30).

Affective outcomes

The fourth stage of home education focused on what many home educators have come to refer to as the "S" word: socialization.

Socialization may be defined as "the process whereby people acquire the rules of behavior and systems of beliefs and attitudes that equip a person to function effectively as a member of a particular society" (Durkin, 1995, p. 614). The inability of children educated at home to be properly socialized is arguably the most common objection raised by the general public regarding home education. This belief was reflected in the West Virginia Supreme Court ruling against home educators, stating that children engaged in home education would be "incapable of coping with life outside of their own families" (State v Riddle, 1981). Having clearly documented adequacy in the area of academic achievement, several researchers turned to affective components of children engaged in home education such as self-concept, social involvement, perceptions, and leadership skills.

Delahooke (1986), described previously, compared the social competence of children educated at home to a group of children in private religious schools. In an effort to determine the impact of familial and peer interaction in the socialization process, use of the RATC showed both groups in the well-adjusted range. Some differences surfaced, however. Although the private school students had greater participation in organized clubs, the children engaged in home education had more frequent

involvement in organized sports, play groups, and church-related activities. Although no significant differences were found for the majority of RATC scores, the non-family subset of the Interpersonal Matrix proved to be an exception. A significant difference was reflected between the traditional school group's reliance on peer influence and the home education group's focus on family relationships. Delahooke concluded that there was a tendency for home education children to perceive their families as more supportive than peers and their parents as primary authority figures.

In an effort to evaluate the self-concept of children educated at home, Taylor (1986) chose a random sample of families from the membership lists of two national home education agencies. Parents completed a demographic survey and administered the PHCSCS to their children. The 224 children in grades 4-12 reflected a 45% return rate. The sample appeared to be demographically consistent with that of previous home education research. The children scored significantly higher than the public school norm on all six subscales and the global scale of the PHCSCS. One-half of the home educated children scored at or above the 91st percentile; three-fourths scored in the top quartile. Self-concept was found to vary inversely with age and grade level. Multiple linear regression yielded a best predictive model of demographic variables which included greater number of years of home education, greater age when beginning formal education, greater number of children in the family who were

participating in home education, higher SES, and lower grade level. Taylor suggested that self-concept in children educated at home may be related to the age at which a child ended conventional schooling rather than a greater number of years of home education, since this particular variable proved to have a positively significant effect when part of a less predictive model. Taylor concluded that, for the majority of children engaged in home education, self-concept was positive.

In a parent survey described previously, Wartes (1987) included questions concerning both the social skills and the social activities of children educated at home. He reported a median involvement of from 20 to 29 hours per month in organized community activities, with chronological peers, and with those differing in age by more than two years who were not part of the nuclear family. Over 94% of the children were rated as having average or above average social skills which included constructive interaction with both chronological peers and adults, leadership ability, and degree of responsibility.

Montgomery (1989) focused on the effect of home education on potential leadership. The study identified family environment during both childhood and adolescence and leadership experience in traditional schools in adolescence as the two primary links to the actualization of leadership potential. A stratified sample of urban, suburban, and rural home education families yielded 55 parents and 87 children ages 10 to 21. Students in a private Christian school ages 10 through 18 comprised the

comparison group. Individual interviews were conducted with members of all three groups. A chi-square test of association was used to determine differences in the participation rates of the two student groups. Significant differences were found in three activity categories. The private school children participated more in sports, summer camps, and performing groups, although it may be important to note that these children were required by their school to participate in a performing group. Although there were no significant differences found in the five remaining activity categories, it may also be important to note that both groups were found to participate equally in volunteer activities even though the private school children again were required to participate in at least one volunteer activity.

Findings from the interviews of children engaged in home education with respect to their perceptions of home education itself revealed that while 71% preferred home education, only 7% preferred conventional schooling. Only 1.2% of reported experiences unique to home education were of a negative nature. Nearly all participants ranked personal control of time and schedule, identified by Montgomery (1989) as an important characteristic of leadership, as one of the benefits of home education. Opportunity for increased social participation due to less school-related time restrictions was indicated by a number of children participating in home education. Montgomery concluded that, rather than having an

isolating effect, participation in home education may actually nurture leadership at least as well as more conventional education.

Three studies, published in 1991, examined the self-concept of children engaged in home education using the PHCSCS or the Self-Esteem Index (SEI) which has been well-correlated to the PHCSCS. Kelley administered the PHCSCS to 67 self-selected children engaged in home education in grades 2 through 10 located in suburbs of Los Angeles. The average age was 9.7 and average grade level was 4.56 with equal gender distribution. Using multiple regression analysis in spite of a slightly smaller number of participants than normally suggested, no significant differences were found for demographic variables. Children educated at home did score significantly higher than the norm on the global score with one-half scoring at or above the 80th percentile and only 16.4% scoring below the 50th percentile. These children also scored significantly higher than the norm on all subtests except the Popularity test, which dealt with boy-girl relationships and questions situated in a conventional school setting. There was no significant difference found between the scores of those children who were administered the PHCSCS by the researcher and the scores reported by Taylor (1986) in which the test was administered by parents. Since over 50% of the children in Kelley's study scored at or above the 90th percentile on the Anxiety subscale, he suggested that a low anxiety level may positively influence the scores on other subscales.

Hedin (1991) chose to compare the self-concept of children in the three distinct educational settings. In an attempt to control demographic variables, the sample was drawn from eleven large Baptist churches in Texas with the assumption that educational and spiritual values would be similar in these families. Volunteer participation was limited to children in grades 4 through 6. The PHCSCS was administered by church staff to a total of 134 children in public schools, 77 children in private Christian schools, and 37 children who were educated at home. Results of three-way analysis of variance and t-tests showed no significant differences with respect to school setting, grade level, or gender in the global scores. Hedin acknowledged the possibility of inconclusive findings due to the small number of participants educated at home but suggested that the lack of significant differences may be due to the supposedly similar religious upbringing that each of these children of Baptist parents may be experiencing.

Kitchen (1991) also attempted to examine the self-concept of children in public, private, and home schools but chose to use the SEI that is well-correlated with the PHCSCS. A mailing of the SEI to approximately 50 families in each group resulted in a response from 22 children participating in home education, 17 children from private schools, and eight children from public schools. The private school and public school children were consequently combined into one group called conventional school children. Although the small sample size precluded the

achievement of statistical significance, ordinal data for the SEI responses were reported. Although both groups scored above the 75th percentile in all categories, the home education group scored at least 14% higher than the conventional group in all categories except the Peer Popularity test. Kitchen concluded that the children in the home education group were being adequately socialized and may possibly even be advantaged as compared to conventionally schooled children with respect to self-concept.

Chatham (1991) examined differing social opportunities of 20 children from public schools and 21 children educated at home by gauging the size, frequency, and closeness of their social contacts. Findings were consistent with the general perception that the majority of interactions of public school children were with peers rather than adults or younger children. The public school children also had more frequent social contacts than did the children educated at home. However, the children engaged in home education reported more interaction with older contacts than with peers or younger children. Chatham concluded that children educated at home did not appear to be socially at-risk, although the frequency and nature of their relationships may, in effect, be restructured as a result of their educational environment.

In an attempt to determine socialization practices, Johnson (1991) interviewed 10 parents from a rural area who were educating their middle-school-aged children at home. Using the seven areas delineated by the Virginia State Department of Education guidelines for middle-school

socialization as the basis for effective socialization practices, Johnson found the group to be demographically similar to the generally reported home education population. Questioning in the areas of Personal Identity and Personal Destiny revealed both that religious beliefs were central in each of the families and that all of the children were encouraged to accept responsibility for their educational progress. For each of the families, the area of Values was addressed through parental modeling and church involvement while the area of Autonomy was reflected in family life responsibilities and job-related activities. Questioning in the area of Relationships revealed that most relationships were fostered within the context of the local church, home education group activities, 4-H clubs, and sports teams. The area of Sexuality was addressed by each family through curriculum materials; most families openly discussed sexual standards. Social Skills were developed through life experience and the expression of clear parental expectations. Johnson determined that these home education families exceeded expectations of the Virginia State Department of Education through the assimilation of positive socialization goals in their daily family life.

Smedley (1992) sought to measure social and communication skills of Christian children through the use of the Vineland Adaptive Behavior Scales (VABS) maintaining that it reflected a more objective, external measure of behavior that did the PHCSCS. Participants recruited at a regional home education activity and at a local church-related activity were

all from Caucasian, middle-class, two-parent, Protestant families. The VABS, used as a survey instrument, was administered by parents to 20 children participating in home education and 13 public school children. The Adaptive Behavior Composite of the home education group was significantly higher than that of the public school group. Only one child from the home education group scored below the 84th percentile, while only three public school children scored above the mean. The composite score of the public school group was in the 23rd percentile. Smedley suggested that since home education with its multigenerational nature and heightened opportunities for communication more closely mirrors society, children who were educated at home appeared to be more mature and better socialized than the public school group.

A comparison of social adjustment between children educated at home and traditionally schooled children was conducted by Shyers (1992). He defined appropriate social adjustment as consisting of social knowledge as assessed by the Children's Assertiveness Behavior Scale (CABS), social comfort as assessed by PHCSCS, and observable pro-social behavior as assessed by the Direct Observation Form (DOF) of the Child Behavior Checklist. Over 1,000 families engaged in home education in central Florida were contacted; the first 35 male and 35 female children volunteered by their parents were chosen to participate. These children were matched according to race, gender, age, family size, number and frequency of out-of-school activities, and SES with an equal number of

traditionally schooled children from the same area. The children ranged in age from eight to ten years old. Both the CABS and the PHCSCS were completed by each child; each CABS total assertive score was used to represent a child's comprehension of appropriate social knowledge and each PHCSCS composite score was used to reflect this level of social comfort. The DOF was used by trained observers to record the observable behavior which occurred when the children were placed in a large room with at least five other children from the same schooling group for 20-minute sessions. The schooling status of the children was unknown by the observers.

Repeated analytic measures showed no significant difference between children educated at home and public school children with respect to scores on the CABS although both groups were in the slightly passive range. The same was true with respect to scores on the PHCSCS, although, in this case, both groups were above the norm. However, the Problem Behavior scores received by the public school group were well above the norm; additionally, they exhibited significantly more recorded problem behaviors than the home education group. Shyers observed that while the traditionally schooled children appeared to behave in an aggressive, loud, non-cooperative manner, the children educated at home seemed to behave in a quiet, non-aggressive, noncompetitive manner. Basing his conclusion on the social learning theory of Bandura (1977) which posited that children learn by observing and imitating others,

Shyers reasoned that since the children educated at home spent most of their time with adults, it is more likely that they would imitate adult behavior. Similarly, since traditionally schooled children spent considerable amounts of time interacting with children of like ages, they would be more likely to imitate their chronological peers' behaviors.

In 1995, Tillman examined the socialization views and practices of 259 families that participated in home education and the self-esteem of their 59 children ages 11 to 14. The SEI, administered by Tillman, yielded a mean composite score that was above average; all five subscale means were also above average. The least frequent number of activities in which their children participated was 2 to 4 activities per month as reported by 6% of the parents. All the parents agreed that socialization was best accomplished within the family but was enriched during various activities outside the home. Each of the parents believed that positive socialization consisted of adequate preparation for adulthood through appropriate multigenerational relationships and responsibilities. For at least 40% of the families, religious faith was a primary force in shaping their socialization views and practices.

Adams and Purdy (1996) focused on the effects of parental home education philosophy on certain perceptions of their children. Primary motivations for the parental choice of home education as reported in 68 parental surveys were classified as either pedagogical or ideological. In response to a survey, perceptions of 103 children were recorded. An

analysis of variance for the two motivational classifications produced no significant main effects with respect to children's perceptions of their mathematical ability, their reading ability, frequency of interaction with friends, or having friends who were also educated at home. However, due to various interaction effects, Adams and Purdy suggested that parental philosophy may be an important consideration in the design of optimal academic programs.

Home education studies of interest to gifted populations

Certain home education research may be of special interest to those involved with gifted student populations. The following studies explored reasoning abilities, critical thinking skills, creativity, college admissions, and academic acceleration. The effect of non-conventional schooling on the development of cognitive intellect was the focus of a study done by Quine and Marek (1988). Specifically, they wanted to determine how children from a home education cooperative compared to a group of children educated solely at home and how both groups compared to conventionally schooled children. Pathways School was a partnership based on a Piagetian model where children met twice weekly for instruction in math and science; the remainder of instruction occurred in the home. Nineteen Pathways students were matched according to intellectual development as determined by a pretest analysis with 11 children educated at home. After a pretest of nine Piagetian tests was

administered to each child, the Pathways children then received nine months of intensive instruction employing Piagetian learning cycle experiences and materials. Parents of children educated solely at home were to continue their normal instructional patterns. Intellectual growth was measured by the movement from preoperational thought through concrete and formal operational thought. T-tests performed after post-testing showed no significant difference between the two groups of home educated children; however, both groups exceeded not only the current national average, but also exceeded the levels of Piaget's original "privileged population" (Piaget, 1972). Quine and Marek also discovered that even without formal training in Piagetian educational theory, the parents who were completely responsible for their children's education employed teaching strategies similar to those of the Pathway instructors such as individualization of curriculum, provision of extensive field trips, and encouragement of exploratory experiences. Quine and Marek surmised that children engaged in home education may move into formal thinking between the ages of 10 and 11.

DeOliveira, Watson, and Sutton (1994) examined the difference in critical thinking skills among freshman students at a particular Christian college whose secondary education had occurred in one of four different settings. The California Critical Thinking Skills Test (CCTST) was administered to 486 freshman who had attended private Christian high schools, 195 students from public high schools, 50 freshmen from

Accelerated Christian Education (ACE) schools, and 58 students from home schools. No significant differences were found between any of the groups on any of the subtests or on the overall scores. Each of the groups, however, scored below average. Both the group educated at home and the private Christian school group scored at the 40th percentile while the public school and ACE school groups scored at the 31st percentile. While the authors found these results particularly discouraging as the college had an academically rigorous reputation, they suggested that since critical thinking skills did not differ significantly according to educational setting, students educated at home did not appear to be at a disadvantage when compared to other students with respect to critical thinking skills.

In the first published qualitative study of creativity in children participating in home education, Williams (1990) considered the relationship between both family characteristics and instructional approach to the development of creativity in these children. Creativity, as a domain distinct from intelligence, was measured by the figural skills subtest of the Torrance Test of Creative Thinking, Form A (TTCT-A). Parental surveys were mailed to a random sample of families involved in home education from the mailing list of a national home education supply company. The demographic make-up of the 176 responding families was generally consistent with previous assessments except in the area of religious affiliation. Over 34% of this particular population identified themselves as

New Agers indicating that this group may have been a specific subset of the larger home education population. Scores for the parent-administered TTCT-A were significantly above the norm on three out of five subscales and the overall score. Correlational analysis yielded a significant difference on three of the subscales with respect to income, parent age and educational level, and prior schooling experience. Increased income, increased parental age and educational level, and greater number of previous years of conventional schooling positively affected TTCT-A scores. Factor analyses yielded significantly positive effects of four instructional approaches. Encouragement of student intrinsic motivation and expression of autonomy in a process-oriented, unstructured format was reported by over 90% of the parents. Williams suggested that while the students educated at home appeared to be more creative than their chronological peers even though the test format may have favored conventionally schooled children, it may be possible that these students educated at home had a greater degree of creativity before the home education process began.

Building on Williams' (1990) study, Medlin (1996) measured not only figural creativity but also creativity in verbal and mathematical tasks which he suggested may have a more direct relationship with the academic abilities of children engaged in home education. Additionally, he measured children's academic achievement and parental degree of satisfaction with and commitment to home education. Forty-three families

with a total of 62 home educated children in grades 3 through 11 participated. Creativity was measured through the use of three subtests of the Structure of Intellect Learning Abilities Test (SOI-LA) that specifically measured figural, verbal, and mathematical creativity. Academic achievement was measured by SAT scores. Parental practices and perceptions were determined by responses to a parent questionnaire. The majority of scores on both the SOI-LA and the SAT were above the national average and, while total group figural and verbal creativity scores were positively correlated with SAT scores, mathematical creativity scores were not. Mathematical creativity scores were positively related to the number of years of home education; conversely, verbal creativity scores were positively related to the number of years of previous conventional schooling. Both mathematical creativity and verbal creativity as well as academic achievement were positively related to the amount of independent study time; the correlation for figural creativity approached significance in this area. Medlin suggested that there may well be an intrinsic feature of the home education environment that fosters creativity.

College admission standards for students educated at home were the focus of a study by Villanueva (1999). In 1994, seventy-five colleges and universities were randomly selected from a list of 300 of the top colleges and universities in the nation. A mailed survey consisting of six questions sent to the Director of Admissions resulted in a 68% response rate. All of the institutions considered applicants who were educated at

home; seventy-four percent had former students of home education currently enrolled. Over 80% of the schools required either the ACT or SAT test while at least one-third accepted General Education Development (GED) scores and/or portfolios. Merit scholarships were available for qualified students who were educated at home at 65% of the institutions while 21% offered no merit scholarships regardless of the type of secondary education. Due to lack of uniform admissions policies for students educated at home, Villanueva recommended early contact with selected higher education institutions to determine specific requirements.

In a case study of acceleration of intellectually gifted students, Leroux and Bell (1998) examined the mathematical progress of an academically advanced boy. When Robert was in kindergarten, his parents requested testing from the school district for their son to determine giftedness but their request was denied. They had the testing completed the following year despite objections from the school principal. Robert was functioning at the 99th percentile in math skills and the 98th percentile in language arts. The principal attempted to bar Robert from the gifted program due to a social skills score at the 84th percentile. The gifted programming offered to Robert consisted of the same French instruction that other first and second graders received. After transfer to a different school, Robert developed both academically and socially for the next four years. However, in the 6th grade he became disinterested in mathematics having already mastered the concepts presented in the classroom. Before

beginning an accelerated math program taught at home by his father when Robert was eleven years old, he was given the Kaufman Test of Educational Achievement (K-TEA). His composite score was the 99th percentile with a grade equivalent of 12th grade, 9th month. Robert's father began to teach Robert algebra; Robert averaged over 90% on all units of study. Deeper interaction between father and son also had positive effects in other areas of family life and Robert's overall education. His self-esteem blossomed; he began to enthusiastically embrace his accomplishments rather than despair over not fitting in with his chronological peers.

Leroux and Bell (1999) concluded that

Home schooling can provide independent study in ways that challenge a child's mind and at the same time build a stronger self-concept. By providing a responsive learning environment, Robert's parents shared their love of learning, helped him sustain his excitement and wider exploration in mathematics, and continue to expand his natural striving for growth. (p. 6)

Summary of Home Education Studies

Ray's (1990) baseline description of home educators as a predominantly Caucasian, two-parent (with slightly higher than average parent education level and only one of which was employed outside the home), middle-class, politically conservative, religious group of people remained relatively unchanged in all subsequent studies (Havens, 1994;

Mayberry et al., 1995; Ray, 1997; Rudner, 1999). However, this description was challenged in a recent issue of Washington Watch (2001) which reported that at least 25% of families now participating in home education were of minority status and by the Barna Research Group (2001) which reported 59% with minority status. African-American home education support organizations are flourishing (Home School Court Report, 2001); Muslim Americans comprise the most rapidly growing segment of the home education population (Bielick, Chandler, & Broughman, 2001). The description of home educators was treated in a more functional manner in a study of primarily rural home educators by Allie-Carson (1990). She determined that these families exhibited a greater role consensus among family members and that parents had greater levels of control over their children's socialization and educational processes that, in turn, may have contributed to the stabilization of the family itself. The multigenerational aspect of family impact was briefly visited in Ray's (1997) study revealing that two-thirds of the grandparents of children participating in home education were supportive of this educational choice.

Examination of motivations for choosing home education proved to be instructive. While Van Galen's (1986) classification of home educators as either Ideologues or Pedagogues was relatively simplistic, it did stimulate further research. Additionally, Resetar and McGown (1987) discovered that motivations may develop in stages and may, in fact,

change over time. The developmental aspect of motivation for the home education choice was also recorded by Gray (1992) as he discovered a shift from concerns about values conflict with traditional education to positive socialization and family unity issues. Regardless of motivation, however, nearly all parents were concerned about the extent of parental rights (Mayberry et al., 1995).

It should be noted that cognitive outcomes of children participating in home education have been almost exclusively measured in terms of achievement test scores which, as Russell (1994) warned "may not have sufficient content validity to serve as the sole operational definition of educational progress and success" (p. 11). Albeit, achievement scores for children participating in home education averaged above the 50th percentile in all studies. No significant difference was reported with respect to gender and math scores (Rudner, 1999; Russell, 1994); parental religious orthodoxy (Ray, 1991); teacher certification of either parent (Rudner, 1999); academic achievement at the college level (Galloway & Sutton, 1995); or between children educated in a private school and those educated at home (Delahooke, 1986). Although Rudner (1999) reported a significantly positive relationship between income, parent education level, per pupil expenditure, and amount of television viewing, three of these factors differed from the national norm in an unconventional manner. Parent education level did, indeed, vary directly with student achievement yet students whose parents had no post-

secondary degree still achieved above the 50th percentile. The amount of daily television viewing did vary inversely with academic achievement; however, only 2% of the fourth-grade students in the sample watched more than three hours per day as compared with 40% of the national comparison group. Although expenditure per pupil of greater than \$600 did vary directly with student achievement, despite the fact that more than 70% of the sample had a median per pupil expenditure of less than \$600, academic achievement scores still outstripped national norms. Ray (2000) surmised that "the practice of home education may ameliorate the effect of background factors [normally] associated with low achievement" (p. 99). On the whole, it would be difficult to demonstrate a lack of academic achievement in children educated at home.

The question of the positive socialization of children participating in home education is a perennial one. The National Education Association (as cited in Medlin, 2000) as well as ninety-two percent of public school superintendents in the study by Mayberry et al. (1995) believed that appropriate socialization could only be accomplished in a conventional school setting. The collective opinion of educational psychologists, reported by Medlin (2000), asserted that children participating in home education would experience difficulty in adjusting to the real world. All of the research to date on the affective outcomes of these children, however, paints a much different portrait. The social skills of 94% of such children with both chronological peers and adults were at least average if not

above average (Kelley, 1991; Wartes, 1987). The socialization skills of children participating in home education exceeded goals developed by the Virginia Department of Education (Johnson, 1991) and possibly even reflected an advantage over conventionally educated children (Kitchen, 1991). Far from being at-risk in terms of socialization, children participating in home education appeared less aggressive (Shyers, 1992), less anxious (Kelley, 1991), and more mature (Smedley, 1992) than their conventionally educated counterparts possibly due to a greater number of multigenerational contacts which more closely mirror society (Chatham, 1991; Shyers, 1992; Smedley, 1992). Additionally, Delahooke (1986) found that children engaged in home education viewed their parents both as primary authority figures and as more supportive than their chronological peers. Therefore, it would be contrary to evidence to suggest that, on the whole, children participating in home education were hampered with respect to their socialization.

The following researchers dealt with topics that may be of particular concern to those involved in gifted education. Although DeOliveira et al. (1994) reported that all groups of college students from four different secondary educational settings scored below average on a critical thinking skills test, both the group educated at home and the group educated in private Christian schools outscored the group educated in public schools. This may, however, indicate an area that should be actively addressed by home educators. With respect to creativity, while Williams (1990)

cautioned that his particular sample of children participating in home education may have had a greater inherent degree of creativity, Medlin (1996) suggested that the home education environment may foster creativity. College admission of children who had participated in home education was considered by each of the institutions responding to the study by Villanueva (1999). In their case study of acceleration in mathematics, Leroux and Bell (1998) found that acceleration provided at home by the parent yielded not only rapid gains in mathematical ability, but also an increase in the child's self-esteem and a deepening of the parent-child relationship.

From the review of home education research, it appears that home education may hold promise as an educational option for an intellectually gifted child.

Chapter Two Summary

The review of the literature on the early familial life and educational experiences of eminent individuals revealed that, while it is recognized that the development of potential is affected by a confluence of factors, many parents had engaged in unconventional practices with regard to their children's development. In particular, these pattern-breaking behaviors were reflected in the choice of non-traditional education (Goertzel & Goertzel, 1962; McCurdy, 1960; VanTassel-Baska, 1989) and in many cases separation from non-familial age-peers (McCurdy, 1960;

Roe, 1953). The review of the literature on parental involvement supported the findings reported in Strong Families, Strong Schools (1994) that “thirty years of research show that greater family involvement in children’s learning is a critical link to achieving a high-quality education and a safe, disciplined learning environment for every student” (p. iii). The review of literature on home education provided consistent evidence that children educated at home made at least average progress both academically and affectively.

Bronfenbrenner (1970) exhorted those involved with the development of children to “draw upon existing research and ask what are or might be the consequences – i.e. what values and patterns of behavior are developed in the new generation . . . [and to] explore the possibilities for introducing constructive changes in the process” (p.1). This charge to draw, to ask, and to explore shaped the essence of this research.

The question of the viability of home education for intellectually gifted individuals may be addressed by exploring the developmental process and the holistic outcomes of intellectually gifted adults who had been involved in home education for a significant period of time. This exploration included the consideration of both “key elements that may represent necessary (although not sufficient) conditions for attaining such high levels of achievement” (VanTassel-Baska, 1989, p.147) and educational and sociological outcomes. The next chapter outlines the specific methodological process that was employed in this exploration of

the role of home education in the lives of several intellectually gifted individuals.

CHAPTER THREE

METHODOLOGY

This chapter dealing with the research methodology is divided into the following sections: (a) a description of a retrospective, qualitative design in the form of an embedded, multiple-case study, (b) the rationale for the use of this particular design in the study, (c) the role of the researcher, (d) procedures for the study which include the definition of the research question, a priori construct specification, participant selection, data collection instruments and protocol, a pilot study, data collection management, and data analysis, (e) validity and reliability considerations, and (f) ethical safeguards and considerations.

Qualitative Case Study Methodology

Case study was defined by Yin (1984) as an inductive analytic means of generating principles from empirical evidence. Qualitative sociological case studies examine a complex, dynamic system from a developmental perspective in order to provide more holistic understanding of an interpersonal or contextual impact inherent in an identified phenomenon than can be gained through a strictly quantitative design. An extensive examination of the developmental impact of social context within the bounded system of a particular case may, therefore, result in an understanding of a broader phenomenon (Bogdan & Biklen, 1998). Case study research allows the complexity of each case to be presented even though the totality of individual experience cannot be captured (Stake,

1988). The use of retrospective case study allowed perceptions of reality from an emic perspective to emerge and enhanced understanding of the phenomenon while the use of an embedded design encouraged multiple levels of analysis of a complex system within each case. Moreover, the use of multiple cases utilized Yin's (1984) replication logic in the sense that findings in each additional case may serve to confirm and strengthen initial findings. Specifically, Eisenhardt's (1989) framework for building theory from case study research was employed. The rationale for Eisenhardt's framework was a synthesis of grounded theory development of Glaser and Strauss (1967), case study design and methodology of Yin (1984), and qualitative analytical methods of Miles and Huberman (1984).

Rationale for the Use of Qualitative Case Study Methodology

Case study research was referred to by Moon (1991) as a powerful methodology for gifted education research and by Foster (1986) as particularly valuable design for the study of a rare phenomenon. As such, it is especially applicable to exploratory research in situations where the context is not easily distinguished from the phenomenon (Yin, 1984).

Home education of intellectually gifted individuals fit each of these descriptions as it is a specific form of gifted education, a relatively rare phenomenon in the field of education, and a situation in which the context is not easily distinguished from the phenomenon itself. Theory-building case study research was selected as the optimal design for this research as it is particularly appropriate in the study of emerging fields.

Role of the Researcher

In qualitative case study, the researcher becomes the primary measuring instrument (Gall, Borg, & Gall, 1996). In light of this key role, the theoretical sensitivity of the researcher is a crucial issue. Theoretical sensitivity may be enhanced by professional experience that yields primary contextual information, familiarity with the literature, and personal experience (Strauss & Corbin, 1990). This researcher has been actively involved in the arena of family education for over three decades. Professional training included an undergraduate degree in sociology and general education, a master's degree in Christian education with an emphasis in family counseling, and completed coursework for a doctoral degree in educational administration with an emphasis in gifted education. Professional experience in the institutional care of juvenile delinquents, tutoring, and home education has provided a plethora of opportunities for participant-observation. A working knowledge of the literature in the areas of child development, family counseling, and education has been continually augmented for more than thirty years.

As a means of controlling the impact of researcher bias, case selection intentionally considered qualified participants who reported a negative experience with home education. Data collection and analysis, as well as conclusions presented, are verifiable through a detailed audit trail.

Procedures for the Study

Getting Started

Eisenhardt's (1989) extension of the work of Glaser and Strauss (1967), Yin (1984), and Miles and Huberman (1984) yielded a specific process for building theory from case study research. This eight-stage process consists of (a) getting started, (b) selecting cases, (c) crafting instruments and protocols, (d) entering the field, (e) analyzing data, (f) shaping hypotheses, (g) enfolding the literature, and (h) reaching closure. Two additional stages requisite for this particular study, the pilot study and data collection management, were appropriately inserted in Eisenhardt's process.

Definition of Research Question

Theory-building case study begins with the definition of the research question in order to focus data gathering efforts for the project and then moves to a priori specification of tentative constructs as a means of a firmer grounding of construct measures. For this particular study, the research question identified in Chapter One focused on the impact of the environmental catalysts of surroundings, persons, undertakings, and events inherent in home education on the talent development process of intellectually gifted individuals.

A Priori Specification of Tentative Constructs

A priori construct identification of the necessary components for an understanding of the impact of home education on the talent development of intellectually gifted individuals consisted of the early familial and educational experiences of eminent individuals as examined in gifted education research, parental involvement as examined in general education research, and home education as an emerging field of inquiry. The construct of early familial and educational experiences of gifted individuals may be found in Gagne's (1995) differential model of giftedness and talent. Gagne identified the environmental catalysts of surroundings, persons, undertakings, and events as specific areas of potential influence on the talent development process of intellectually gifted individuals. These four environmental catalysts served as an organizer for data collection from the four individuals and analyses in this study.

The construct of parental involvement may be found in Hoover-Dempsey and Sandler's (1995) causal and specific model of parental involvement. They identified parental involvement decision, parental involvement form, mechanisms of influence, and tempering variables as the critical components of parental involvement. These four components served as an organizer for data collection from the parents and analyses in this study. Yet, as a means of maintaining theoretical flexibility, neither theory nor hypotheses were developed at this juncture.

Case Selection

The potential target population consisted of all intellectually gifted adults born before 1985 who were part of the home education process for at least five years. This population is neither easily accessible nor readily open to the scrutiny of non-familial persons.

Contacts were procured from several sources. Suggestions of intellectually gifted participants were elicited through personal contact, letter, telephone, or e-mail (see Appendix A) from an expert in the field of gifted education, from practitioners, and from prior contacts made while the researcher was a participant in the home education process.

Each recommended participant will be sent a cover letter (see Appendix B) explaining the nature of the research project, a consent form (see Appendix C), a preliminary questionnaire (see Appendix D), and a self-addressed stamped envelope in which to return both the preliminary questionnaire and the consent form. A postcard or email follow-up was sent to recommended participants who failed to respond within two weeks.

From this accessible population, case selection was made according to theoretical, or purposeful, rather than random sampling. Cases were selected through purposeful sampling strategies employed by the researcher from qualifying respondents which were all those who are intellectually gifted, were at least eighteen years of age, and had been educated at home for at least 7 years. Purposeful sampling strategies included the consideration of extreme, homogenous, or maximum

variation cases with respect to certain criteria reported on the preliminary questionnaire such as gender, ethnicity, duration of home education, age during home education, participant-perceived quality of the home education, post-secondary experience, or present occupation. By selecting participants on the basis of potential contribution to the study, efforts were then able to be focused on cases which can "replicate or extend theory by filling conceptual categories" (Eisenhardt, 1989, p. 533).

Optimally, the addition of cases would continue until theoretical saturation was reached. Pragmatically, however, the determination of the number of cases prior to data collection and analysis is a common practice and reasonably involves four to ten cases (Eisenhardt, 1989). Due to time and financial constraints, this study consisted of four intellectually gifted individuals and both of their parents who are geographically accessible to the researcher.

Data Collection Instruments

The crafting of instruments and protocol comprised the next stage in Eisenhardt's (1989) framework. Data collection methods employed researcher-designed instruments and included a total of three separate questionnaires and two separate interview guides. Two means of strengthening content validity were employed. First, the content of these instruments was drawn from the literature as noted in the following descriptions. The resulting instruments, the models from which the

instruments were drawn, the tables of specification, and rating and recommendation forms (see Appendix E) were submitted to independent review by a panel of two experts in the fields of gifted education and home education. Revisions were then made as necessary.

The preliminary questionnaire (see Appendix D) completed by the individual, eliciting fundamental information, consisted of 20 items divided into four sections. Section A was a request for demographic information. Section B was a request for information concerning the home education experience of the individual. Section C was a request for information concerning the post-secondary educational and vocational experiences of the individual. Section D was a request for information regarding the determination of intellectual giftedness.

A subsequent, more detailed questionnaire organized according to the four areas of Gagne's (1995) environmental catalysts in the talent development process was completed by the individual (see Appendix E). This questionnaire contains 37 items divided into four sections as follows (a) surroundings, (b) persons, (c) undertakings, and (d) events.

A detailed, 29-item questionnaire was completed by each of his parents (see Appendix F). This questionnaire consisted of five sections as follows (a) demographic information, (b) parental involvement decision, (c) parental involvement form, (d) mechanisms of influence, and (e) tempering variables. Sections B, C, D, and E were in alignment with

Hoover-Dempsey and Sandler's (1995) causal process model of parental involvement.

The interview with the individual followed an interview guide (see Appendix G) and was again structured according to Gagne's (1995) four environment catalysts. However, a fifth section on vocational pathways was added.

The separate interview with each parent followed an interview guide (see Appendix H) again structured according to the causal process model of parental involvement developed by Hoover-Dempsey and Sandler (1995).

Pilot Study

Additionally, a pilot study was conducted to ascertain the appropriateness of the data collection instruments, procedures, and the interviewing techniques used by the researcher. A preliminary questionnaire was completed by an intellectually gifted individual who was born after 1970 and was involved in home education for at least five years. The detailed individual questionnaire was also completed by the individual. The parent questionnaire was completed by one of the individual's parents. Separate interviews were conducted with the individual and one of the individual's parents.

The responses of the individual and parent to the questionnaires and interview questions were examined for relevance to the intended issues. Parent feedback suggested allowing future participants the

opportunity to preview the interview guide in order to allow time for more thoughtful responses. This option was made available to individual and parents prior to interview session.

Entering the Field

Data collection protocol.

Individuals selected for participation were contacted by phone or email in order of preferred case selection so as to ascertain willingness to continue. When a positive response was elicited, the detailed individual questionnaire with a return self-addressed stamped envelope was mailed separately to each participant and a detailed parent questionnaire with a return self-addressed stamped envelope was mailed separately to each of his parents. Separate interviews were also scheduled at this time with the individual and each of his parents. This selection process continued until a total of four participants and their parents had been procured.

Beginning with the first case, separate audio-taped, face-to-face, two-hour interviews were conducted with the participant, the mother, and the father. Whenever possible, the interviews were conducted on two consecutive days.

After each contact or interview with participants, a contact summary sheet (see Appendix I) and document summary form (see Appendix J), if applicable, was completed (Miles & Huberman, 1984). These forms were modified to include not only descriptive field notes but also reflective field notes which included any impressions of the use of the particular method,

conflict, frame of mind of the participant and the researcher, and any points of clarification (Bogdan & Biklen, 1998).

At this point, the interviews were transcribed for both member-checking and for data analysis. Within six weeks of the interview, the transcribed interview and a written summary of the interview data were sent to the participant for verification and clarification. Any comments or changes made by the individual were noted in the left margin of the researcher's copy next to the original statements.

Data collection management.

All information pertaining to each of the four intellectually gifted individuals and their parents was kept in hard copy form in four different-colored three-ring binders. Each binder was divided into three sections labeled (a) individual, (b) mother, and (c) father. Each section was subdivided according to data source labeled (a) consent form, (b) preliminary questionnaire, (c) detailed questionnaire, (d) interview, (e) document, (f) artifact, or (g) other. Questionnaire information was stored in a fireproof box. Data from each audio-taped interview was transcribed verbatim and preserved both on computer disk and in hard copy form. Both the audio tapes and the computer disk were stored in a fireproof box.

Data Analysis

In this study, the holistic style characteristic of qualitative work began with detailed, concrete, extensive description to inform the reader

and moved toward the generation of insight. This movement was affected through the use of the following five procedures, each of which was described in detail: (a) within-case analysis, (b) cross-case analysis, (c) shaping hypotheses, (d) enfolding existing literature, and (e) reaching closure. The written descriptive report of each case comprised Chapter Four. The written report of both within-case and cross-case analyses, shaping hypotheses, and enfolding the literature comprised Chapter Five of this study. The written report of the final stage of reaching closure comprised Chapter Six of this study.

Within-case analysis.

Each of the three transcriptions and questionnaires from the first family were analyzed individually (see Appendix K). First, the transcription of the individual interview (labeled 1A) was read as a whole and any impressions were recorded in the left margin. Next, the transcription was dissected through a line-by-line analysis in a search for context, meaning, complexity, and interaction in a manner similar to the open coding phase of Strauss and Corbin (1990). A tabulation of each coding notation was made (see Appendix L). After this procedure was completed, an axial coding phase began to rebuild the fractured data as relationships and patterns were identified. Any relationship or pattern was tabulated along with specific open coding notations from which the relationship or pattern was drawn. Finally, hypotheses and theory were shaped as an understanding of relationships developed during the selective coding

phase. Any understanding identified was charted along with the specific open coding and axial coding notations from which the understanding was drawn. The questionnaire responses were treated in like manner. Any information drawn from a questionnaire was labeled Q; any information drawn from a preliminary questionnaire was labeled PRQ.

While distinctive, these three stages of open coding, axial coding, and selective coding described above are rarely fully completed in a linear manner. Rather, after analysis of the transcribed interviews had begun, further communication with each participant was initiated, if necessary, to clarify and probe emerging themes. This overlap of data collection and analysis allowed for opportunistic revision of data collection that has both legitimacy and desirability in theory-building research (Eisenhardt, 1989).

The researcher then submitted the draft to the interviewee for his written response and as a result, adjustments were made to the text. When the first case had been analyzed, theory generation began as a result of the identification of emerging patterns (Eisenhardt, 1989). In this study, any potential theory generation was recorded, along with the data location and the date, in a separate file.

The identical process was repeated first with the data collected from the mother (labeled 1B) and then again with the data collected from the father (labeled 1C). The identical process then began with the second participant and his parents. Research proceeded case by case in like manner until all within-case analyses had been completed. This analytic

process of treating each case as a separate entity allowed unique patterns to be identified. However, if pertinent questions were raised at any point, adjustments to data collection methods were made in order to allow for more thorough investigation of issues; as necessary, prior cases were revisited (Eisenhardt, 1989).

Cross-case analysis.

Only after all within-case analyses had been completed did cross-case comparison begin. First, data from each of the twelve participants was subjected to a search for cross-case evidence of each individual concept, category, theme, and pattern both in terms of similarities and differences of each item as well as a measurement of its dimensionality along a continuum. This evidence was recorded on a matrix identifying the concept, its origin (i.e. Q-1A to indicate questionnaire of individual from the first case), similarities, differences, and intensity (see Appendix L). Eisenhardt's (1989) three divergent techniques for analysis across cases was employed. The search continued as the cases were then paired (pairing cases 1:2, 1:3, 1:4, 2:3, 2:4, 3:4,) in order to uncover further evidence of similarities and differences. Finally, a comparison of cases was made according to data source (comparing data first from the four participants, then from the four mothers, and finally from the four fathers), and according to data method (comparing data first from the twelve questionnaires and then from the twelve interviews. Corroborative

evidence served to strengthen findings; conflicting evidence potentially indicated the necessity of further examination. These techniques which forced the researcher to examine data through different lenses "improve[d] the likelihood of accurate and reliable theory . . . that [was] a close fit with the data" (p. 541).

Shaping hypotheses.

At this point, Eisenhardt (1989) recommended a shift in emphasis from dissecting data toward shaping hypotheses through a constant comparison of constructs and data. In this study, an iterative tabulation of evidence identified both within-case and across cases for each construct including researcher comments was made in order to sharpen construct definition and enhance construct validity (see Appendix L). Such evidence also aided in deepening understanding of the nature of any relationships between constructs that were discovered, thus building internal validity.

Enfolding the literature.

The next stage of enfolding emergent concepts, themes, and patterns into the existing literature is crucial to theory-building research (Eisenhardt, 1989). Enfolding findings into the existing literature was accomplished by identifying the concept, relationship, pattern, or understanding in this study and identifying its supportive or conflicting presence in the literature (see Appendix L). Comparison served to relate similarities in the literature in fields not commonly associated with one another resulting in a higher conceptual level of theory generation.

Consideration of relationships to conflicting literature served to deepen insight and strengthen confidence in the findings.

Reaching closure.

Eisenhardt (1989) described reaching closure as the point at which the researcher ends the iteration process between theory and data. This closure should occur when any additional changes to the theory yield marginal improvement. In this study, closure was reached when each of the cases had been submitted to the described analytical process and some generation of insight had been accomplished. Closure also addressed considerations, implications, and areas for further research. Visual data displays such as matrices, relational networks, and graphs were presented where appropriate (Miles & Huberman, 1984).

Validity

Internal Validity

Internal validity addresses the consistency of research findings and reality (Gall, Borg, & Gall, 1996). The primary means for ensuring maximum validity of findings in case study research is triangulation. In this study, triangulation was accomplished through the use of multiple data collection levels (the participant, the mother, and the father); multiple data collection methods (questionnaire and interview); and multiple disciplines (gifted education, general education, and home education). Eisenhardt (1989) indicated that a priori specification of constructs permits and encourages more accurate measurement and thereby enhances construct

validity. In this study, the specified constructs were early familial and educational experiences in the lives of eminent individuals, parental involvement as it relates to education, and home education. Member-checking, involving the returning of relevant data to each individual for verification and clarification, was another means of strengthening internal validity. In this study, member-checking occurred as a copy of the analysis of data was submitted to the corresponding individual for review.

For Eisenhardt (1989), internal validity is strengthened by the constant iteration between data and constructs which occurred in this study during data analyses in an effort to provide an understanding of theoretical reasoning for the presence of particular relationships. Internal validity was also enhanced in this study as a comparison was made between the identified constructs and hypotheses and conflicting literature leading to either revision of or reconciliation of thought. Additionally, content validity of the researcher-designed instruments in this study was strengthened by the close connection of the instruments with the literature, the external review by the panel of experts, and the completion of a pilot study.

Johnson and Ryser (1996) identified researcher bias with respect to subjectivity as a threat to validity. Contrarily, Eisenhardt (1989) argued that the analytic method of constant comparison endemic to cross-case analysis employed in this study actually forces the researcher to move

outside preconceptions as data are viewed through varying lenses. In this study, the role of the researcher was described earlier in this chapter.

External Validity

External validity describes the transferability of findings from the current study to other settings (Gall, Borg, & Gall, 1996). While maintaining that both the specification of a particular population and the careful selection of cases enhance external validity by defining limits, Eisenhardt (1989) emphasized that the essence of theory-building research as employed in this study is the measurement of constructs and verification of relationships through data analysis that yields "testable hypotheses and theory that are generalizable across settings" (p. 546). This view was supported by Yin (1984) who described the foundation of case study research as analytic logic in which results are generalized to theory rather than to individuals and by Moon (1991) who described the external validity of case study research as the forging of analytic generalizations rather than statistical, individualistic ones.

Reliability

In order to enhance external reliability, the replicability of the study, the researcher employed strategies suggested by Yin (1984) which included the maintenance of an adequate case study data base and a detailed audit trail of methods, procedures, and analytic processes.. This strong chain of evidence including transcriptions, direct quotations,

summaries, and visual data displays, should provide the reader with a logical progression from data to findings and on to conclusions (Yin).

Ethical Safeguards and Considerations

In the interest of the protection of participants involved in this research, the procedure for conducting research at the College of William and Mary was followed. As part of the required format, a written proposal for this study was submitted to the School of Education Human Subjects Review Committee. None of the participants was involved in this study until approval by the committee was obtained. Prior to involvement in this study, a consent form (see Appendix C) was signed by each participant. The consent form was used to inform each participant that (a) participation would be voluntary and could be terminated at any time by the participant, (b) all information and interaction between the individual and the researcher would be confidential with access to all data being limited to the researcher and her advisor, and (c) pseudonyms would be used to ensure anonymity.

Summary

The methodology employed in this qualitative case study of the impact of environmental catalysts of home education on the development of intellectually gifted individuals has been delineated in this chapter. Eisenhardt's (1989) specific process for building theory from case study research served as the framework for developing this particular research methodology. Discussions included a description of a retrospective,

qualitative design in the form of an embedded, multiple-case study; the rationale for the use of this particular design in the study; the role of the researcher; procedures for the study (which included the definition of the research question, a priori construct specification, participant selection, data collection instruments and protocol, a pilot study, data collection management, and data analysis); validity and reliability considerations; and ethical safeguards and considerations.

The next chapter is a presentation of findings from the data as the impact of the environmental catalysts inherent in home education on the talent development of five intellectually gifted individuals is examined.

CHAPTER FOUR

FINDINGS

The purpose of this study was to enhance understanding of the impact of the environmental catalysts of surroundings, persons, undertakings, and events inherent in the home education on the development and pathways of intellectually gifted individuals. In an effort to enable the reader to follow and evaluate for himself the progression in thinking from data gathering to the conclusions that are drawn in the final chapter, data for each of the four cases will be presented in narrative form in this chapter. Data garnered from each individual and each of his parents through questionnaires and personal interviews will be woven together using this study's theoretical warp and weft of Gagne's (1995) differential model of giftedness and talent and Hoover-Dempsey and Sandler's (1995) causal and specific model of parental involvement in an effort to portray a descriptive design of each of the four home education families. Two modifications have been made to Hoover-Dempsey and Sandler's model in an effort to adapt this model to the home education setting. First, under the heading *Parental Involvement Form*, the subheading *Specific invitations and demands for involvement from child or school* has been changed to *Specific invitations and demands for involvement from child, school, or other source*. Additionally, under the heading *Tempering Variables*, the subheading *Fit between parents'*

involvement actions and school expectations has been changed to Fit between parent involvement actions and parent educational expectations.

This narrative will progress according to the following structural pattern: (a) demographic information, (b) the parent involvement decision, (c) the parent involvement form, (d) mechanisms of influence, (e) tempering variables, (f) the individual and his surroundings, (g) persons in the individual's life, (h) the individual's undertakings, (i) events in the individual's life, (j) perceptions of the traditional education experience if applicable, (k) perceptions of the home education experience, and (l) the individual's present pathway.

The Browns

Introduction to the Browns

Karen was just sixteen when she and Curt were married. In order to obtain her mother's permission to marry, she had to promise to attend college. Even without a high school diploma, she was awarded a scholarship to study art. However, she became pregnant nine months after she was married and at age 17 ½, Esther was born. Now, nearly thirty years later, they are the parents of ten children ranging in ages from 28 to 4 years old. More than half of those thirty years has been lived out as homesteaders on a small farm in upstate New York. There were periods of time in which they did not own a car and even when they did, as Esther put it, "I knew [it] was unlikely to start at any given moment." They now own two vehicles and Karen has obtained a driver's license. Their

annual income of under \$25,000 remains under the Federal Poverty Guidelines. Only in recent years were they able to install electricity and indoor plumbing.

Petite, dressed neatly but plainly, in her mid-40s, with her long brown hair pulled back, Karen was a bit shy, yet composed and enjoyable to talk with. She had aspired to study art before married. For many years, in addition to raising ten children, she has been an illustrator collaborating with her mother to produce a regular children's feature in a religious magazine. In order both to fulfill her promise to her mother and to continue her intellectual pursuits, Karen is now in college, after first taking the GED and then scoring a phenomenal 1480 on a 1600-point scale on the SAT. Uncertain of her major, she is studying Arabic.

Dressed in a flannel shirt, in his early fifties, his long, neat ponytail streaked with gray, Curt was down-to-earth, open, and a good conversationalist. At 21, his aspirations were to get married; have a sense of belonging; to have quiet, space, and time to think; to understand everything; and to influence the way people look at the world. He married Karen while he was in graduate school studying mathematics. In the succeeding years, he has been a cartographer, a continuing education teacher, and a farmer raising sheep. He returned to graduate school in 1993 earning a second master's degree in 1998 and a Ph.D. in mathematics in 2000. He is presently teaching mathematics at a local college. While acknowledging that some of his earlier aspirations have

been fulfilled, he continues to seek after wisdom and understanding and quiet times to think. "Some aspirations," as Curt put it, "are not compatible with children."

Parental Involvement Decision

Parental role construction.

Both of Karen's parents graduated from high school. Her father started attending college without his parents' support or encouragement, but left to fight in the Korean War. Although he took many college courses after he returned home, he never graduated. Her mother has written a children's column in a religious magazine for many years. Karen said that "[college] education was their main concern" for her.

Both of Curt's parents were "very strongly of the opinion that education was the crucial thing." Growing up in rural Texas during the Depression, his mother was able to complete high school, but his father had had to quit grammar school to work on the family farm. Curt related, "He really wanted me to be a success."

Karen reported that her parents continue to be supportive of their practice of homeschooling and that the families have frequent contact. However, Curt's parents are not supportive of their decision to homeschool and contact with them remains infrequent.

Curt described his parental role as "an outgrowth of aims and goals we had as husband and wife, an extension of the life we wanted to live together; therefore, we thought it must be good for the kids." Karen

believed that her role as a mother has gone through transformation over time. At seventeen, she was "determined to be the perfect mother . . . our kids were going to be perfect." She acknowledged that they were "kind of strict" partly in reaction to her parents having been fairly permissive with her younger brother. She explains, "The longer I'm a mother, the less power I feel I have to actually make them into anything. They are little people, growing into something. . . . I'm just watching to see what God is leading them into." She has come to see her role as "enjoying them [while being] a model, and to support and encourage [them]."

Curt described his parenting style as authoritative; his daughter described it as authoritarian. Karen ranked her parenting style as not quite permissive, yet not fully authoritative. Esther ranked her mother's parenting style as authoritative.

Sense of efficacy.

Responses on individual questionnaires indicated that both Curt and Karen saw themselves as highly committed to their parenting goals as they continued to pursue intellectual and creative interests. They scored very high in intelligence; scores also reflected a high level of curiosity, persistence, a sense of humor, and the capacity to work alone. Curt rated himself high on insight and ego-strength; moderately on self-discipline, motivation, flexibility and intensity; and low on coping and relational skills. Conversely, Karen rated her herself low on ego strength, but high in coping skills, motivation, and flexibility.

General opportunities for parental involvement.

Numerous general and specific opportunities for parental involvement presented themselves daily as their family grew and matured.

Parental Involvement Form

Specific domains of skills and knowledge.

Karen's areas of skill and interest included art, music, languages, literature, cooking, and sewing. She considered music and languages to be her passions. Curt listed his areas of knowledge as math, science, history, and theology; his skills as writing and gardening; and poetry, the Bible, and spiritual things as his interests. He considered each of these areas to be a passion.

Mix of time and demands.

Curt viewed the emotional needs of each of their ten children as the greatest demand on his time and energy. In a related vein, Karen regarded the social interaction with her children as the greatest demand on her time and energy, followed by the time required to meet their educational needs. She also listed cooking and housework. For Curt, the demands of his teaching job, lack of finances, the demands of duties at his church, and care of the house and land were other factors affecting the use of his energy and time. They both included gardening as a demand.

Specific invitations and demands for involvement from child, school, or other source.

Shortly after Esther was born, Curt and Karen started reading about education. Several intellectuals at their church who had studied with Francis Schaeffer at L'Abri in Switzerland directed them to authors such as Dorothy Sayers, John Holt, and C.S. Lewis. Curt stated, "Everything we read made us unhappy with the way education was being done in general."

They each had had negative experiences as students in public schools. Karen reported, "I hated it even though I was a straight A student." Curt agreed, stating, "I really see in my own life the effects of public school. . . [effects that] even though you are not aware of them at the time, they are harmful." He continued, "When you think of it, socialization is the opposite of education. Socialization is trying to make you fit into society. Education, it seems to me, is trying to make you question society and to think for yourself. They are at cross-purposes, and if you try to do socialization and education both, education always loses. . . . We really wanted our children not to be socialized, at least as much as possible. . . . To be socialized on your own terms and to make peace with your own society – to say, 'OK, I can be an American this far but no further.'"

The inner-city school district that they were in at the time Esther was born was "scary and violent" according to Curt and "disorganized and really bad" according to Karen. The only other traditional choice available was a Christian school which was "expensive" (Curt) and "run like a

military academy” (Karen). Neither option presented an educational atmosphere they desired. Karen concluded, “We just decided we would keep them home. We thought we were inventing [homeschooling].” When asked if over the past 28 years they had ever contemplated public education as a viable alternative, Curt replied, “We never considered it. Every once in a while a few of them would get together and stage a rebellion, wanting to go to public schools. But the longer we do [homeschooling] and the more we see public school, the less inclined we are toward public schools.”

Karen had no formal training as a teacher. Curt has taught in higher education situations for a total of fifteen years.

Mechanisms of Influence

Esther’s educational structure included about four hours of instruction and learning four or five days per week. Some summers were regarded as vacations, while at other times, home education was continued year-round. Instructional responsibilities were fairly evenly divided between the parents. Both Curt and Karen employed direct instruction regularly yet they “tried to spend as little time as possible sitting” (Karen). Curt acknowledged, though, that he “tended to teach by lecturing.” Karen noted, “We’ve never had a schoolroom. There are just books piled all over the dining room table. Reading a lot together has always been a big thing – just tons of good books. [Learning] was just part of life.” When asked about his approach to teaching math, Curt answered,

“Math was always something they pretty much did on their own. If they had a question they would come to us. I’m not sure that worked out real well. It was partly due to the lifestyle we were trying to live as farmers and so I did not have the kind of time that they ought to have had. They did pretty well but I think they would have done a lot better if I had been more readily available to them.”

Karen believed she employed modeling and reinforcement often while Curt only occasionally used these mechanisms of influence.

Tempering Variables

Developmentally appropriate involvement strategies.

Curt said, “Our philosophy of education evolved with each child. Esther was pretty independent [as a learner] which was what we were aiming towards. We made a mistake of not capitalizing on that when she was young; we tried to have too much control.” Karen observed, “Our teaching role developed with each child.” She elaborated, “At first, we were too rigid; we started out with a lot of structure. She learned to read by the time she was four. Esther did okay with that, but she didn’t enjoy it. It became very burdensome to her. . . . So we backed off for a year and didn’t make her read anything. After that, she got really motivated and was very hands-on. We had her learning Latin at age eight.”

Karen related, “We would sit down every month and talk about [what was working] . . . we would change things to suit her. If something stopped working, we stopped using it and used something else or just

made something up." Curt said, "We tried to develop her music. We could see that she was talented in that area so we traded for a piano." He also said they "emphasized memorization a lot We paid no attention to grade levels. Esther worked at her own speed and progressed from one level to the next." Karen added, "At seventeen she went off to college because at that point, it seemed we couldn't be her teacher anymore. She came to a place where she was on her own"

They only used standardized testing, according to Karen, when "the school made us. It is so meaningless, we just don't think about it. Schools tend to want to label people and I think that's bad."

Fit between parent involvement actions and parent educational expectations.

There was a high degree of agreement between Curt and Karen with respect to their educational expectations for Esther. Primary for both was the desire to instill in Esther a love for learning. Additionally, they hoped Esther would come to "know herself . . . her strengths, her weaknesses, and her desires" (Curt) and to "develop her own special talents" (Karen). Thirdly, they aspired to give Esther "the mental tools to pursue understanding on her own" (Curt), being "confident in her ability to learn" (Karen). They also hoped to encourage Esther to have "the strength of character to choose to do what she loves to do rather than pursue economic security" (Curt); to "pursue her passion rather than money"

(Karen). Curt expressed the desire that Esther “would be compassionate and care that justice is done.”

Curt and Karen agreed that Esther had basically fulfilled all these expectations.

Esther and her Surroundings

Twenty-eight years old, married, mother of two daughters ages one and three, Esther extended a warm invitation to enter her home. In a moderate neighborhood of other older houses built closely together with tiny yards, Esther and her husband rented one floor of the house. There was a quiet atmosphere both outside and within. She spoke to her older daughter in a gentle manner, encouraging her and explaining things carefully to her.

A self-described extrovert, both parents call Esther “a very socially oriented person” (Curt) who is “very intelligent, very good at music, and very gifted (Karen).” Esther realized that she “could understand and learn things more quickly than others, but never thought of [herself] as gifted.” Karen rated Esther high or very high on each characteristic of intellectually gifted individuals while Curt rated her as moderate to high.

When asked about her role in the family, Esther immediately responded, “the organizer . . . I got them to do things . . . and the babysitter.” Curt described her as “very much a surrogate mom, very authoritative, extremely confident.” Karen concurred, calling her “the quintessential big sister, very dominant, very take-charge.” Both parents

said she was very creative, "always making things" (Karen). Curt added that Esther "felt things intensely but didn't express herself a lot."

Additionally, Karen described Esther as a perfectionist who "got mad when an answer was wrong." Esther agreed saying, "I always wanted 100%. I remember the first standardized test. I got in the 97th percentile. My parents said, 'Wow! You're great!' but I said, 'No, you're supposed to get them all right.'"

Karen reported no asynchrony in Esther's development.

For the first twelve years of Esther's life, the family lived in an old house in an urban area of a large mid-western city. They then moved to an old farm in a very rural area of upstate New York where Esther spent the next five years.

Persons in Esther's Life

Esther indicated that she and her mother have always had a close relationship, sharing similar beliefs and able to express their feelings to each other. Although a "rough relationship" (Esther) with her father has improved somewhat since she married, she still finds it difficult to express her feelings to him and still views their belief systems as differing.

Of her siblings, Esther said, "We were always together. We had a lot of family activities; we had a lot of family reading time." At the time of the move to the farm when she was twelve, Esther recalled, "there were six of us . . . one every two years." When at the age of seventeen she left for college, there were eight children. Noting that someone had had two

children spaced thirteen years apart, Esther remarked that there had been "light at the end of the tunnel but [the person] turned back."

Esther's belief that her mother was her most significant role model is supported by both her parents. Interestingly, Esther also called her mother an anti-role model describing her as "very much the submissive wife . . . doing the wife and mother thing. I love my mother very much. I want to be like her, but not do what she does." When it was noted that her mother married at age 16, Esther firmly stated, "that was something I aspired not to do."

Esther and her parents agreed that she interacted well with all ages. She described her early childhood in an urban setting as a positive time when they "saw a lot of people" and there was "a lot more social interaction." When they moved to the farm, Esther recalled that "there was a lot less social interaction. The first couple of years, we hardly went anywhere and didn't see a lot of people. We really were basically just home. It was hard not to see anybody."

Esther felt a sense of security in the city environment, but "moving shook up the routine quite a bit." As the oldest child, she believed she was much more aware of the financial issues of the family. "I knew that our money was running out. Were we going to be able to buy food next week? It made me very uneasy."

Esther felt accepted by the significant people in her life "for the most part, although I always had a difficult time with my dad. . . . He's a

very smart person; math is his big thing. I've never been good with it. . . . There were always tensions revolving around that. I always felt he wanted me to do more or something different than I did and that I wasn't as motivated as I should be."

When asked about Esther's sense of belonging, Curt said that "at times she might have sensed too much belonging, a kind of inescapable belonging." Karen remembered that Esther "spent quite a bit of time wanting to go to school like the other little kids." In Curt's words, "she so much wanted to be part of society." He continued, "Certainly our second daughter is not socialized at all. She is a political radical. I'm very pleased with that."

Esther's Undertakings

Esther said she had "quite a few" responsibilities as she was growing up. Karen recalled that once they moved to the farm, "We were really busy. Esther was in charge a lot. She just took over the house stuff – cooking, baby care – she did a lot of that. She was happy as long as she didn't have to go out into the garden. She hated worms."

Isolated from children other than siblings, Esther did have imaginary friends. Esther said, "I had a whole scenario worked out at one point. I can't remember the details now, but they were always there." Curt recalled, "I remember one time when she was probably five. We were in our kitchen and she went out to the back yard to play. We heard her in the backyard calling, 'Hey, guys! I'm glad you could come. I didn't know if you

would make it.' We looked out, and there was nobody there. She did a lot of that."

Karen related that Esther also liked cooking, sewing, and drawing, explaining, "She was just always making things. She was so productive and creative all the time." Curt explained, "E—' means industrious or artistic. And she is both practical and creative. She has very little interest in anything theoretical."

Esther was about four years old when they got their piano. Esther remembered playing "Old MacDonald." Being able to pick out a melody sparked her interest in playing. At age seven, she was able to take piano lessons for the first time. The excitement for Esther wore off after about six months. She explained, "I had the 'old school' teachers that had you sit for 45 minutes and you had to practice whether you liked it or not." Curt reported that although Esther wanted to quit at this point, he and Karen made her continue in order to "give it a fair chance. After that, she was self-motivated." Esther explained, "There were times when I was frustrated, but I always liked playing my stuff. I didn't always like their stuff, but I liked mine."

Curt recalled that "at one time Esther was interested in sheep a lot. Our neighbor was one of the only people in the county who could shear by hand. So she took Esther as an apprentice and Esther got good enough that she could work as a sheep shearer on her own. She was discouraged, though, because of the physical difficulty of it."

When asked about a sense of efficacy, Esther replied, "There were . . . things that I thought I didn't do quite so well [as piano], so I did what I thought I could do well. I always felt comfortable with performing. I had a very good teacher and that was something that I felt I did very well, so I concentrated on that."

Events in Esther's Life

There were two major transition periods in Esther's life. The first occurred at age twelve when the family moved to a farm. Curt described the impact of the move, "Esther was very socially oriented, so it was hard for her since we were really isolated. I always wanted to be more isolated, so that wasn't something that I could really empathize with. I felt the isolation was more helpful than harmful for her, even though it was very frustrating to her." Karen remarked that Esther "probably resented not being able to go into town for the first few years. It was a hard life. We did everything by hand. She would have liked an [indoor] bathroom." Esther regarded those years on the farm as her only period of adversity. Esther stated succinctly, "It was very difficult."

When in her later teens Esther was able to participate in group activities, she related that she "always had trouble feeling comfortable in groups of people. I wasn't used to seeing friends more than a couple at once, so when I would go to youth group [at my church] that had lots of people, I would always feel uncomfortable. It tended to be overwhelming. The youth group used to play soccer. I avoided that like the plague."

When asked about Esther's coping mechanisms, Karen replied, "She kept herself busy."

Esther's second major transition will be described under the heading *Esther's Pathway*.

Perception of Home Education Experience

Curt and Karen viewed Esther's home education as positively providing a freedom to pursue her interests. Curt evaluated the experience as one that enhanced the development of Esther's self-discipline and also involved her in teaching her younger siblings. Karen regarded the flexibility to adapt to Esther's particular needs and the opportunity for extensive interaction with good literature as strengths of the home education experience. Esther agreed that she had the opportunity to learn about what interested her and that she developed a strong sense of self-discipline. She explained, "I learned how to study on my own and that carried over into college. A lot of people were floundering there but I was able to take the book home and learn from it." She also believed that freedom from particular time constraints allowed her to be employed in order to "save money to put [herself] through school."

Excessive structure at first followed by some inconsistency in subsequent years due to the competing needs of an increasing number of siblings were described by both Curt and Karen as weaknesses of Esther's home education experience. Karen felt that Esther's only academic weaknesses were in "those things that she was not interested

in.” Esther agreed that her learning was, at times, random. Esther did not feel that she used time constructively and agreed with her father that she was pressured by her parents during the early years of home education but not challenged enough toward the end of her home education. She also identified a lack of both classroom skills and participation in team sports as weaknesses in her home education.

With respect to costs of home education, Curt and Karen agreed that lack of adequate financial resources “hindered the realization of some opportunities” (Curt). He viewed Esther’s difficult transition to college and sense of isolation as possible costs. Yet he said, “When I saw the way she interacted at college, I really think it benefited her, it paid off. She was able to take unpopular stands on different things that I don’t think she could have done otherwise.” Karen identified a lack of time for “personal pursuits of the parents” as a cost to her. Esther agreed with her father in regarding her “difficult adjustment to college” as a cost. She also has had difficulty with employment applications due to the lack of a high school diploma. Esther regarded a “lost experience of childhood” as a third cost to her of her home education.

Esther’s Pathway

Esther’s second major transition occurred when she went to college. Curt said, “I think it was really scary for her when we dropped her off at the school and left her. I think she wanted to get a lot of distance [between her and the farm] but at the same time she was fearful. But

probably, very intensely both. She had three roommates. One of them she became good friends with initially. . . . With the other two, it was a pretty stormy relationship. Yet, she did well; she handled it." Karen thought Esther did very well explaining, "She is so social. She excelled at everything. The only problem was that she went to a Christian college where there are lots of wealthy kids and . . . she would come back home to the farm where there is cow and sheep manure." Curt related, "She chose to always stay [at college] and work through the summers. . . . She was constantly choosing to stay away."

Esther related that "it was very difficult when I first hit college. I spent the first year just freaking out. I'd never taken notes in my life. I'd never taken a science lab. I'd never seen one. I've never had that kind of group situation. . . [not] even sports activities. . . . I had no clue how to do a research paper." Esther recalled being "torn between studying music and elementary education. I enjoyed music but . . . I thought I would never be able to find a job with my music. . . . I had a lot of people tell me that I had never been to a school, so I couldn't teach in one. That really ended up making my choice for me. I felt I really couldn't teach since I wouldn't know what I was doing in a school. . . . I just couldn't enter that field. That finalized that I would go into music, because that's what I could do. I don't know that I regret it. I enjoy music and you can't always make a decision based on what's going to get you the best job."

Esther graduated with a Bachelor of Music Performance and a 3.72 GPA on a 4-point scale. She was also listed in *Who's Who in American College and Universities*.

Esther's definition of her role as a mother is a "very broad one." She prefers to stay at home while her children are young saying, "I certainly like being with them." Either she or her husband is with the children at all times. "I don't like to see someone else raising my kids." However, she added, "Children don't need to be the focus of the universe because they're not. They are going to learn that soon enough. I think they need to know that all people have interests." She also enjoys working part-time, describing a "need to have something separate for myself. I think I'm a better mom for it."

Esther is not planning to educate her children at home. She feels it was a "mixed experience" for her but that "the negatives outweighed the positives." Esther elaborated, "There are too many things that they miss out on. My daughter is extremely social. She's in nursery school now and it's been wonderful for her. We simply are trying to teach them to be independent and to deal with other people and live in the world. So we've got to start somewhere – we might as well start with school and let them learn to deal with other children there and grow from there. It just doesn't make sense to me to keep them home for eighteen years and then say, 'Okay, have fun.'"

Although music remains her passion, Esther is not certain that she views it as her calling but does see continuing to be involved with it. She discovered that she "enjoys teaching one-on-one." This discovery may reinforce Curt's opinion that Esther's present vocation is only partially reflective of her ability to teach. Karen and Curt agreed that Esther is unlikely to radically change her vocational direction in the future, although Karen related, "She has had a hard time keeping up with her music with two little girls. [But]I'm not worried, I see I'm getting back [to college] now." Both parents are content with the path Esther has chosen; Karen added, "She's a good teacher and mother." Esther echoes her parents' contentment as she said. "I'm happy with the ways things are now."

The Davidsons

Introduction to the Davidsons

He was like a tree firmly planted by a stream (Psalm 1, Bible); she, a delicate flower rooted in his shade. Married for over 25 years, George and Bev raised their three children, ages 25, 22 and 17, in the suburbs of a mid-sized city in New York. Their yearly income is presently over \$50,000.

Tall, slender, and conservatively dressed in nice slacks and a blazer, Bev seemed tentative at first. Although she had aspired to first work in the field of respiratory therapy before having children, she has

never regretted concentrating solely on child-rearing. Believing it to be her primary calling, she has found fulfillment in her role as wife and mother. In her late 40s, her present aspirations are to "finish our job with the youngest child, be a grandmother, and continue to help others." Her secondary calling is to the church. Bev, having completed "two years of college twice," felt that her second two-year period of training in the medical field has given her a good background in science that has enabled her to their children more effectively.

In his early 50s, in a tweed sport coat, dress shirt, and tie, Greg seemed steady, quietly confident, yet humble. His aspiration before marriage to have a good career has been fulfilled. Greg has an undergraduate degree in math and literature, a master's degree in mathematics, and is a member of the Fellow Casualty Actuarial Society. Working by day in his profession as an actuary, for the past 7 years, Greg has responded to a call to be a tent-making pastor in his church. His present aspirations are to "help establish our children in life, to care for my wife, and to lead the church" [in which he pastors].

Parental Involvement Decision

Parental role construction.

Both of Bev's parents graduated from college and believed that higher education was "very important." From rural West Virginia, Greg's mother was the first in her family to earn a college degree. His father attended the same school on a baseball scholarship. However, he died

when Greg was quite young. Subsequently, Greg was raised by his mother who had become a public school teacher and his maternal grandmother. His paternal grandparents had "no concept of an educational environment." His mother, "down-home and practical," maintained what Greg described as a healthy balance between an emphasis on the importance of education and a pressure to succeed. Greg recalled, "Being a professional was not a goal she set before me."

Both Bev's parents and Greg's mother were skeptical of home education at first, but "warmed to the idea after a few years" (Bev). During the period of Serena's home education, they had frequent contact with Greg's mother. Contact with Bev's parents was limited as they lived out-of-state.

Bev credited Dr. James Dobson, a long-standing Christian parenting proponent, as having significantly affected the development of her maternal role through his books and Focus on the Family radio program, saying, "It really helped me formulate how I wanted to raise my kids. I told them when they were very little if they don't learn to obey me that they won't learn to obey anybody . . . [even] the Lord." Greg indicated that, due to his father's early death, he had no "natural concept of a [paternal role]." When Serena was born, the importance of his role as a father became highly significant. He asserted, "Once I saw my first child, parenting quickly became the number one thing to do." Greg found direction from his pastor who was a "very strong father figure." Amazed

that God entrusted them with a child after experiencing a difficult period in the late 1960s, Greg viewed their parenthood as "evidence of our redemption."

Greg described his parenting style as authoritative; Serena agreed. Bev described her parenting style as slightly more authoritarian than Greg's; Serena ranked her mother's parenting style as merely authoritative.

Sense of efficacy.

Responses on individual questionnaires indicated that both Bev and Greg viewed their level of commitment, motivation, counseling skills, and continued pursuit of intellectual and creative interests as very high. Greg also rated his capacity to work alone as very high; ego-strength and insight high; and persistence, curiosity, intensity, and self-discipline as moderate. Bev rated her relational ability and sense of humor very high; persistence, curiosity, intensity, self-discipline, and coping skills as high; emotional maturity as moderate; and flexibility as low. Both Bev and Greg saw themselves as having a moderate level of intelligence; Serena, however, rated each of them very high on level of intelligence.

General opportunities for parental involvement.

Both Bev and Greg actively sought opportunities to be involved in the lives of their children believing that parenthood carried a concomitant responsibility for involvement.

Parental Involvement Form***Specific domains of skills and knowledge.***

Bev's areas of skill and interest included science, Bible, music, parenting, listening, counseling, patient advocacy, and cross-cultural assistance. Her passions are Bible, parenting, and assisting others. Greg listed his areas of knowledge and interest as math, creative writing, history, current events, and chess. The Bible and history are his passions.

Mix of demands on time and energy.

Bev's health, especially problems associated with Chronic Fatigue Syndrome, was noted by both Bev and Greg as a factor that affected available time and energy. His career as an actuary and his calling as a pastor, as well as the needs of his children and extended family constituted other major demands for Greg. Home education, including lesson planning and support group functions, as well as interpersonal relationships comprised major areas of demand for Bev.

Specific invitations and demands for involvement from child, school, or other sources.

At the end of Serena's 3rd grade year, the Christian school she had been attending closed. Bev acknowledged, "We had been looking for other options." Had there been a Catholic school locally, Greg said he would have opted for that as he had attended Catholic school. At that point, Serena asked if she could be homeschooled. Bev remembered

responding, "Whose homeschool would you like to go to?' I really didn't think I could do it." Greg added, "Another family in our church had been homeschooling successfully. They convinced us to try it." Bev admitted, "It was out of desperation that we started [homeschooling]."

Bev elaborated, "Then we decided at the end of the first year that it was going okay. We found a lot of difference between what she had learned in school and what we were able to teach her. So we kept on going." Serena was educated at home from 4th grade through 12th grade.

Bev had no formal training as a teacher. Greg had taken qualifying courses for teacher certification in the 1970s.

Mechanisms of Influence

Serena's educational structure included about eight hours of instruction and learning five days per week. The local public school schedule was followed throughout the year with respect to holidays and vacation days. Instructional responsibilities largely fell to Bev with Greg functioning as the "de facto disciplinarian" (Greg). However, Greg taught all the math courses and, as Serena grew older, also taught writing and a course on worldviews. Both Bev and Greg believed they had employed reinforcement and direct instruction often. Bev reported a slightly greater use of modeling as a mechanism of influence than did Greg.

The nature of their teaching roles gradually underwent a series of changes. At first, Bev and Greg employed direct instruction almost exclusively. Then, as Serena developed as a learner, they transitioned

into a more supervisory capacity, always working toward Bev's goal of becoming a facilitator. By the end of Serena's home education experience, Bev wanted her to be able "to complete assignments without having too much interaction." As Serena put it, "My parents' teaching roles really evolved. My mom did most of the teaching but when [I] hit high school, my dad was very involved in teaching those subjects that he was strong in. That was a neat thing."

Tempering Variables

Developmentally appropriate involvement strategies.

"The first curriculum was the only one we knew about. It was Hewitt-Moore," said Bev, "and they just walked us through everything." She continued, "Then after a few years, I saw that I could do [it], so . . . if [materials] were good and fit the need we had at the time, then we would try it. Sometimes I would have to limit my involvement [due to health issues], so we would get curriculum that would give us everything. We finally used Advanced Training Institute materials by Bill Gothard the last few years."

As for determination of grade level, Bev related that she started Serena at her age-appropriate grade level to be certain that Serena was "secure in what she knew." Bev elaborated, "When I first had her home, she had to write a letter but she could not spell anything on that paper except for her name. Yet she always had A's in spelling. She could learn it for a test but she could not integrate it into her own personal life. So my

goal was to take what you know and then ask, 'What does that mean for later on?' Until we reached a mastery level, we never moved on." At the same time however, Bev reported being "challenged to release Serena from perfectionism."

With respect to academic strengths, Greg described Serena as an excellent self-learner with a great imagination whose "thinking patterns were very linear." He added that she had "a hidden talent for creative writing " which surprised him. With respect to academic weaknesses, Greg responded, "She is dyslexic but her biggest weakness is not thinking outside the box."

With respect to character development, Greg asserted that Serena's home education "very strongly influenced her moral development," adding, "She has a very strong-willed character. When she grabbed on to the moral dimensions of things, she became very black and white." As Serena put it, "I enjoyed a high standard for character. My mom is a very 'no-nonsense person', and my dad sort of balanced that out, so between the two of them, I think everything came out just fine. I don't regret anything. Having a clear sense of right and wrong is a good thing to have." Bev stressed that they worked hard at finding socialization areas that had both positive and negative side effects, but there was always [one of us] there supervising what was going on in terms of her reactions." Greg elaborated, "Culture is a very powerful influence. It is very hard to break. . . . If you can establish your identity in conflict, that's a very strong

thing. But if you try to establish it in a separate, monastic thing, I don't think it is as strong. You are really distrusting God to carry you in the midst of that cultural conflict."

Fit between parent involvement actions and parent educational expectations.

Bev admitted, "I was scared to death that if I did [homeschooling] wrong, she would never go to college. So at first my expectations were more fear-based rather than reaching a certain goal." However, there was a high degree of agreement between Bev and Greg with respect to their educational expectations for Serena. Primary to Bev and Greg was a dual concern for both her academic development and her spiritual development. Academically, they expected Serena to "master the basics" (Greg), to "develop an ability and desire to learn" (Bev), and to "develop self-discipline" to work on her own (Bev and Greg). Because of her excellent intellectual abilities, Greg "impressed upon Serena that she should get an advanced degree." Yet Serena added, "I thought of [becoming a] doctor; my mother thought nurse. The point is that they didn't want to push me. They never made high expectations and then made me strive toward that." With respect to her spiritual development, they desired "a healthy separation from peer culture" (Greg) and "the strength of character necessary for applying personal faith in all areas of life" (Bev). More time for Serena's personal pursuits was an expectation of Greg. Both Bev and Greg agreed that their involvement actions generally

supported their educational expectations for Serena and that she had fulfilled these expectations.

Serena and her Surroundings

Cold, dark, and rainy outside in an urban area of a major city in Pennsylvania, Serena's welcome in the hallway of her apartment complex was warm and sunny. Twenty-five years old and married, Serena's apartment seemed open, spacious, and inviting. A self-described perfectionist, her parents believe she is at least moderately intellectually gifted, always having scored extremely well on achievement tests and performing above grade-level tasks. Serena, however, was "always surprised at how well [I] did" in testing situations. All three Davidsons rated Serena very high on commitment, persistence, self-discipline, and the capacity to work alone. Characteristics of intellectually gifted individuals on which they rated Serena either high or very high were insight, intensity, motivation, and driving desire. Serena and her mother rated Serena high in curiosity while her father rated her moderately. Bev and Greg rated Serena moderate on ego-strength; Serena rated herself high.

When asked about her role in the family, Serena immediately replied, "The organizer." Her father agreed, describing her as "quite managerial." Bev concurred, recalling that when they were about to begin homeschooling, "Serena wanted to run the whole show."

Persons in Serena's Life

Serena indicated that she and her mother had always had a close relationship but that it has become even stronger now. They continue to share similar beliefs and express their feelings to one another. She and her father continue to enjoy a rewarding relationship, sharing beliefs and able to express their feelings to one another. All three family members demonstrated a very high degree of respect, trust, and warmth toward one another. Limits were clearly defined and consistently enforced; Serena usually obeyed the established rules.

Serena, the first-born, has a brother who is two years younger; her sister is seven years younger. She recalled, "Because we had no TV growing up, we had to entertain ourselves a whole lot more. We made up our own stories and . . . we also did a lot of reading."

Of her grandparents, Serena exclaimed, "I had wonderful grandparents." Her paternal grandmother stayed with them when Greg and Bev were away on business trips. Serena related, "She was a teacher. She used to send me [back] my thank-you notes corrected. She was quite skeptical, actually, of the whole homeschool thing. So she would come and watch and by the end she was very supportive." Serena wasn't as involved as often with her maternal grandparents as they lived out-of-state. They did take the grandchildren on several educational trips such as one to the National Zoo in Washington, D.C. Serena affirmed, "They were a very positive influence in my life."

Each had a different idea, though, as to Serena's role models. Bev suggested that Serena's paternal grandmother was, at least in part, a role model as she was "very orderly and seemed a lot like Serena." Greg remembered that "she was always fascinated by doctors and those in authority and tried to imitate that." Serena said of several of the older girls in her homeschool group, "I was always watching them and I had some other role models in the church."

Serena and her parents agreed that she interacted very well with all age groups, although Greg thought to a slightly lesser extent with chronological peers and younger children. Serena elaborated, "I grew up with a whole group of kids. There were a lot of neighborhood kids and our big social arena was the church. . . . We were in a homeschool group, too." As for interaction with strangers, Serena remembered "people being amazed that [she] could carry on a conversation with an adult."

Serena's strong sense of security and sense of belonging as she matured were confirmed by her parents. She also experienced a sense of acceptance by the significant people in her life.

Serena's Undertakings

When asked if she had a sense of usefulness to the family and sense of responsibility, Serena replied, "Oh, yes. Especially when my sister came along and when my mom had some health problems later." Bev related, "My health was always up and down. Serena always felt that

she had to keep the house [clean]. It was not something that I put on her but [rather] it was something she just put on herself."

On the use of fantasy, Serena articulated, "[My siblings and I] would constantly have elaborate make-believe games. If I were reading the *Mandy* series . . . then I played an orphan. If I were reading *Little House on the Prairie*, then we would play that." Greg recalled, "She was very imaginative. When she was very young, she would dress up in costumes made up of spare clothing around the house. It always amazed me what she was able to come up with."

Working with children, babysitting, and doing "stuff around the house" were Serena's main interests. She identified literature as a passion. Bev indicated that Serena especially liked books in a series such as *Anne of Green Gables* and *Grandma's Attic*. As a teen, she enjoyed volunteering at summer camps for children where she eventually met her husband.

Serena conveyed a strong sense of efficacy saying, "I can do anything I want to" and "I feel competent [at work]. I know what I'm doing and know when to ask if I don't know." However, the testing arena elicited a much different response. Serena explained, "I'm the kind of person that when I go to take a test, I know I'm going to fail, and then I come out with an A. It's just me."

Events in Serena's life

Serena experienced three major transition periods during her home education experience. The first transition, from Christian school to home, was as Serena described it, "a very exciting time for me. I really enjoyed it . . . all my friends were homeschooled, too."

Serena also experienced three significant times of adversity during her home education experience. Adversity first struck in the form of her mother's illness. Bev explained, "I had Chronic Fatigue Syndrome that sometimes led to depression. I had several surgeries and she always felt that she had to take care of the kids. She always rose to the occasion but it was hard." Greg added, "There were several periods of [my wife's] illness and there were times when she was completely incapacitated. Serena really stepped into the mother role and assumed a lot of the responsibility beyond her time and years. I think that affected her."

Adversity struck again as Serena transitioned into her teen years. Bev capsulized the situation saying, "The biggest struggle I remember was socially integrating what she believed with the life around her. Our church had a big influx of handsome Russian young men and she chose to stay under her father's authority and not be boy-crazy like a lot of her friends were, so she lost a whole bunch of her friends. She was in 8th grade." Bev told Serena, ". . . if you listen to me, I will not let you fail. She believed me. God did a work in her life. . . . We walked her through how special she was to the Lord and how special she is to us. Anybody who wanted to talk

to [her] had to talk to her father first. It was really different. She never really dated. She had one prospective suitor and that didn't work out. Then she met her husband. We just let our kids know how special they were and we are not going to let just anybody toy with [them]."

Greg described Serena saying, "She never did seem like one of the kids in her peer group. She was like a fish out of water and she had a lot of church involvement. Some homeschoolers are very isolated and just want to create a *Little House on the Prairie* thing but we didn't do that. She was always meshing, with all the Russian people coming in. She has a cross-cultural view of things already just from that."

When asked about her coping mechanisms, Serena replied, "My dad [was my coping mechanism]. He was always there to talk to . . . and I went for walks." A third period of adversity will be dealt with under the heading *Serena's Pathway*.

Perceptions of the Traditional Christian School Experience

Several strengths of Serena's traditional Christian school experience included competent teachers (Serena and Greg), Christian-based curriculum (Greg), resources such as libraries and computers (Serena), development of a sense of responsibility (Bev), and some positive extra-curricular activities and competitions (Bev). All three family members agreed that minimal individual attention and high student-to-teacher ratios were weaknesses of Serena's traditional school experience. Both Bev and Serena called attention to negative socialization influences

such as "lack of adequate supervision during socialization experiences" (Bev) and "exposure to foul language" (Serena). "Standardized presentations" (Greg) indicating a "lack of flexibility" (Serena) were additional weaknesses.

Tuition was identified by all three family members as the greatest cost of Serena's traditional educational experience. "Time constraints" (Serena), transportation difficulties (Greg), and "stress on the child" (Greg) were also regarded as costs.

Perceptions of the Home Education Experience

Serena was engaged in home education from the fourth through the twelfth grades. All three family members regarded a good curriculum as a strength of Serena's home education experience. Specifically, Greg believed that their choice of curriculum "encouraged individuality." Bev cited the use of "mastery level teaching;" Bev and Greg believed that Serena's home education allowed for consistent discipline. Bev and Serena regarded the development of Serena's self-study skills and the opportunity for the development of strong family bonds as two additional strengths of her home education experience.

Lack of proficiency in testing skills, including a lack of preparation for the SAT and lack of expertise in foreign languages were identified by both Greg and Bev as weaknesses in Serena's home education experience. Serena viewed inaccessibility to team sports and not having taken an SAT exam as weaknesses of her home education experience.

Serena also believed that "home disruptions such as illness became school disruptions" and that "parents can take a child's poor performance personally [creating] more push for succeeding."

With respect to costs to the family of Sarah's home education experience, all three unanimously indicated the amount of time required especially by Bev. They also attested to effects of participating in home education on Bev, with Greg calling attention to its "stress on [my] wife;" Bev said that "it was isolating at times" for her. Serena summed it up saying, "Mom gave up a lot."

Serena felt that she had used her time constructively and all three family members believed that she had been academically challenged by her home education experience.

Serena's Pathway

Serena completed her home education with a 3.98 GPA on a 4-point scale. However, she recalled, "I didn't have a clue about what I wanted to do." Bev and Greg asked her to remain home for another year to pray about her future direction. Bev admitted that it was "very hard for her not to go to college right out of high school." Serena acknowledged, "They held me back. I see God's hand on that. God worked through my parents."

A third period of adversity triggered a truly bittersweet transition into adulthood for Serena. Bev explained, "The year Serena graduated, Greg's mother had cancer and came to live with us. We had home nurses coming

in and Serena did a lot of caring for her on her own. That's when we started looking into some sort of nursing career."

 Serena elaborated, "[My grandmother] was a very proud woman and she didn't want her sons taking care of her. Eventually, my mom helped out but my grandmother really liked it when I took care of her. She would say, 'You would make a very good nurse' and I would say, 'Grandma, I'm going to be a doctor.' She said, 'No, don't be a doctor, be a nurse.'"

 Serena was awarded an academic scholarship to study nursing at a local college. She credited her smooth transition from home education to higher education to four factors. First, her mother had purposely fostered self-study skills in her. Secondly, despite thinking that her math and science skills were inadequate, Serena admitted, "When I got to college . . . and was compared to peers, I guess I did just fine." Finally, the transition from family to college social life was facilitated both by her continuing to live at home while she attended classes and by the fact that "a lot of students were older than [she] . . . and were working adults with a different mindset." Greg added, "That time was very structured between school and church. . . . [Serena] stepped out of that [structure] but she quickly became very structured again in her own life." Serena earned an associate degree in nursing, graduating as the valedictorian of the class.

 Receiving another academic scholarship, Serena went on to complete a Bachelor's Degree in Nursing at the local state university's

Institute of Technology where she was named to *Who's Who in American Colleges and Universities* and awarded the state university's Medal of Honor and a Presidential Award. She graduated with a 3.95GPA on a 4-point scale.

After scoring a 530 verbal, 570 quantitative, and 660 analytical on the GRE and armed with her third academic scholarship, Serena then attended an out-of-state university with a reputation for academic excellence. She earned a Master's of Science Degree in the Pediatric Nurse Practitioner Program, graduating with a 3.98 GPA on a 4-point scale.

Now married to a man of Chinese heritage, she works as a pediatric nurse practitioner; her husband attends medical school. Serena remarked that her husband loves to tell people she was homeschooled. "He always says, 'Isn't she normal?'"

Serena views her vocation as a pediatric nurse practitioner as her present calling. Bev described Serena's vocational choice as a good fit with her abilities saying, "She has a very good mind for it, she's very caring and very intuitive." Greg allowed that "it was okay, but not the path that I would have chosen for her." He elaborated, "I will be surprised if she is still doing it ten years from now. Her husband will by that time be a doctor and then I think she'll be involved in home educating her own children. She is a good teacher. She will do well with that. More so than with the physically demanding stuff that comes with nursing."

Actually, all three family members were in strong agreement regarding the likelihood of change. Although she is content now with her current vocational pathway, Serena articulated, "I want to be a mother. That's my first vocational choice. I would like to be a stay-at-home mom. I tried to pick a vocation where I could be flexible."

When asked if there was a likelihood of her homeschooling her own children, Serena responded, "Yes, my husband is in the Air Force, so we will be moving around. I think homeschooling would be a stable environment for them. However, I am not against sending me kids to school, so wherever the Lord leads is fine."

The Longs

Introduction to the Longs

Both in their early 50s, trim, conservatively dressed, married nearly 30 years, parents of two grown daughters, with an income of more than \$50,000, Lois and Brian looked like a fairly typical WASP middle-class couple. Living in a modest home, complete with a small stable and a few acres, Lois had chosen to remain at home after the birth of their first child and to dedicate herself to raising her children. Brian continued to teach physics in the local high school. However, unlike his colleagues in the public school, when their younger daughter was in fourth grade, Brian and Lois decided to teach her at home.

An energetic, animated woman, Lois didn't remember having any specific aspirations before she was married, describing herself as "a confused young woman who went with the flow." For the first three semesters of college, she "consistently made the Dean's List but hated studying and was miserable." She left to pursue executive secretarial training and subsequently was employed for several years. In retrospect, Lois believed that she chose to do "the most important thing in life at that time" which for her was raising her daughters. Her present aspiration is to "become more like Christ, growing in knowledge and wisdom" in order to "better disciple other women" and to become a better wife, mother to her adult children, and grandmother.

Slightly taciturn yet amenable, with a Bachelor of Science degree in Electrical Engineering and a master's degree in math, Brian aspired to choose a profession that he would enjoy. He is content with his choice to teach physics at the high school level in an inner-city school. His present aspirations are to be both "a quality teacher who is a benefit to [his] students," and "a good Christian witness to [his] students."

Parental Involvement Decision

Parental role construction.

Both of Lois' parents graduated from high school. Although her mother had some secretarial training, she stayed at home to raise her three daughters. Lois' father entered college but left to serve in World War

II. Upon his return, he started a plumbing and heating business. They encouraged their children to pursue higher education.

Both of Brian's parents were also high school graduates. His mother also had secretarial training and also chose to remain at home in order to raise her children. Brian's father, as well as his mother's brothers, graduated from college with degrees in engineering. Brian's parents placed such a high value on higher education that they "strongly encouraged [him] not to take a job while school was in session" so that he could better focus on his studies.

Lois reported that both of her parents were supportive of their practice of homeschooling and that the families had had frequent contact. Despite frequent contact with Brian's parents, Brian observed that with respect to home education, his parents "kept their opinions to themselves."

Lois described her role as a mother as "very traditional." She elaborated, "My husband and I both had mothers that stayed at home . . . that was our model. We agreed, even before we were Christians, that when children came along, I would not work." Brian concurred, adding that his role as a father was based on "instinct " and on "the way [he] was raised." He also observed that becoming a Christian at the age of 33 indirectly influenced his parental role conception.

Lois rated her parenting style as not quite permissive, yet not fully authoritative; Chloe agreed. Brian rated his parenting style between authoritative and authoritarian; Chloe basically agreed.

Sense of efficacy.

Responses on individual questionnaires indicated that both Lois and Brian possessed a high level of intelligence, a high degree of intensity, a capacity to work alone, and that they continued to engage in intellectual and creative pursuits. Answers also reflected moderate levels of flexibility, relational ability, and counseling skills. Lois rated herself high on insight and curiosity; moderate on commitment, motivation, emotional maturity, and coping ability; and lowest on sense of humor, self-discipline, and ego-strength. Brian rated himself high on commitment, perseverance, and self-discipline; moderate on sense of humor, coping skills, and emotional maturity; and lowest on ego-strength.

General opportunities for parental involvement.

Both Lois and Brian were continually involved in monitoring public school education. Lois related, "A gifted program that met three times each week was a highlight for both daughters. We were very pleased with the program. . . . But some of the [regular] classroom teaching didn't fit in with our religious beliefs. When they got a new guidance program, I went up to school to sit in on the changes to make sure that some of the elements that we didn't approve of did not begin. . . . We were watching closely to see what would happen. We even asked the principal, 'Was it

always like this or did things change drastically in the last ten years?' He said, 'It changed.'

Parental Involvement Form

Specific domains of skills and knowledge.

Lois enthusiastically learned "about whatever the current need is or what intrigues [her]." An avid vegetable gardener, she "grew giant peppers this year" and "can also saddle a horse and milk a goat." She indicated that she had consistently sought to improve her home management skills and to further her understanding of the Bible. Lois identified her passion as applying God's Word to her life.

With interests ranging from physics, electronics, and computer to gardening and fitness, Brian indicated that he was passionate about studying the Bible as a means of strengthening his "relationship with Christ."

Mix of demands on time and energy.

Brian listed teaching followed by coaching as the greatest demands on his time and energy during the time of Chloe's home education. Fitness training consisting of biking and running also consumed much of his time and energy. Cited at the top of Lois' list of demands was "keeping Chloe on track" combined with transportation needs and the downtime necessitated by sitting through a multitude of lessons and rehearsals. Juggled with these demands for Lois were the needs of their older

daughter and her husband, household administration, and church-related ministry.

Specific invitations and demands for involvement from child, school, or other sources.

Several factors, although none of them primary, contributed to the Long's decision to homeschool. First, Chloe, who was very easily distracted, was part of a classroom in which learning centers were employed. Lois observed, "When the teacher was working with another group, Chloe was listening to her instead of doing her work . . . so that when she came home, she had all these worksheets to do. . . . She was exhausted. I didn't like the role of having to push her every evening." Secondly, as Lois put it, "Some jealousies started happening. Another little girl . . . another gifted child . . . just had it in for Chloe. It got to the point where little cliques started. Chloe was an extremely sensitive child. It got to the point where she didn't want to go to school." Thirdly, Lois believed that Chloe was very influenced by her chronological peers. Additionally, as mentioned previously, the Longs were concerned with the current direction of the guidance program in the local school district.

At this juncture, when the Longs were uncomfortable with several school issues surrounding Chloe, a friend of Lois' lent her *All the Way Home* by Mary Pride. Lois found it contained "ideas that were really different" and "shook [her] up a bit." Upon finishing it, she passed it on to her husband who "was not the type to jump on a bandwagon" and "who is

more discerning". After reading the book, however, due to their Christian beliefs, they were both convicted about home education. They then offered both of their girls the opportunity to be homeschooled. Lois related that not more than a few weeks had passed before "Chloe came home from a very stressful day and said she didn't want to go back. I was petrified. [The next] morning I woke up and thought, 'What have I done?'"

Although he "knew it was the right way to go," Brian recalled feeling "somewhat anxious" as it was a "major decision" upon which they were "staking [their] child's future." When asked how his being a public school teacher affected the decision, he replied that he had to "weigh the risk of sacrificing expertise in certain areas against other things." As for the reaction of his colleagues, Brian remembered that "each one had an opinion. They would bring up weaknesses [of home education]. I always admitted that it is not necessarily the best for everybody. No one was totally negative, though . . . you mainly got that [negative response] from the non-active teachers in the organization."

Brian and Lois had planned to have Chloe return to the public school system for the 5th grade. However, after completing the last three months of 4th grade work at home, Lois remembered, "I became more and more convicted that this is what I should be doing." At the end of 5th grade, Lois and Brian asked Chloe if she wished to continue with home education. She did.

By the end of Chloe's 6th grade year, however, Lois and Brian had invested significant time and energy in having their older daughter exempted from "some objectionable health curriculum." Lois explained, "At that point, we were starting to get really uncomfortable feelings about what was happening in the school district. We had been asking Chloe regularly if she had decided about going back to [public] school. Then I read something by Bill Gothard that said that we shouldn't be asking our kids to make decisions that should be made by [parents]. We decided that Chloe was not going to enter that school system any more."

Lois had no formal training as a teacher. At this point, Brian had taught in the public school system for nearly 20 years. Chloe remained at home until the completion of 11th grade. What began as a short-term educational intervention with an unhappy girl grew into a 7-year educational adventure.

Mechanisms of Influence

Chloe's formal education included 4 or 5 hours of instruction and learning 5 days per week for about 40 weeks each year. Instructional responsibilities were largely assumed by Lois until Chloe reached the age of 13. From that point on, Lois's role evolved into that of a facilitator and resource person as Chloe was able to accomplish a substantial amount of learning independently. As for his teaching role, Brian recalled, "She wanted to be done when I was home. . . . What I was good at, she wasn't good at, or at least she thought that."

Both Brian and Lois employed direct instruction and modeling regularly although, as noted previously, for Lois, the use of direct instruction diminished over time. Brian believed he employed reinforcement often as a mechanism of influence while Lois reported using this technique only sporadically. However, an excellent example of Lois' use of reinforcement surfaced as she related, "I knew from being a failed piano player that you needed to play with others. So to get Chloe over the hump, I bought myself an alto recorder and some easy duet books and we would play together. When she could hear herself playing to an accompaniment, that really did something for [her]."

Tempering Variables

Developmentally appropriate involvement strategies.

The Longs began home education in the spring of Chloe's 4th grade year. Lois related, "We just took her books from school home." In keeping with Lois' habit of immersing herself in interest areas, she borrowed "all the back issues of *Teaching Home* magazine and read. We did things together. There was a little stream behind the house and I'd sit and read to her while she played in the stream. When we decided to go on to 5th grade, we were getting a little braver so we tried different curriculum." Brian reported that for history, they "just used books" rather than a history text but they did use the Saxon math curriculum regularly. Lois remembered, "We used to spend one hour a day on math until my

husband said just ½ hour is enough. We talked about having to set a timer for Chloe to stay focused. But . . . she would practice three hours a day. . . . The amount of focus she [had] on the horn is amazing and really kind of strange. Boring, boring, [horn] exercises . . . she could focus there."

Brian offered, "She didn't start to memorize until much later than you might expect for a musician. . . . It wasn't as much a chore of memory as it was relaxing. If she could think it, she could play it." Because Chloe's music was "time-consuming," Lois added, "academics were not pushed hard. We pretty much did the basics." Brian described Chloe's learning style as "fairly independent."

Fit between parent involvement actions and parent educational expectations

There was a high level of agreement between Lois and Brian with respect to their educational expectations for Chloe. Lois wanted to provide a better environment physically, socially, emotionally, and spiritually for Chloe as well as a more balanced lifestyle. Brian hoped that Chloe's education at home would be at least equivalent to, if not better than, the public education she could have received; Lois and Brian wanted Chloe to be able to pursue higher education if she so desired. Brian believed that home education would allow for a fuller development of Chloe's musical talent. One of Lois' goals was that Chloe would develop into a lifelong learner.

In retrospect, Lois and Brian agreed that Chloe had met all of their educational expectations for her. Brian observed, though, "if she all of a sudden said that she was going to pursue something in the sciences, I don't think she would have been able to do that, but as far as literature, English, and history, she would have been fine." Lois added that "it was hard to tell at the time that we were in the process. . . . We didn't know what we were doing, but the Lord did."

Chloe and her Surroundings

Only 22 years old and just over 5 feet tall, Chloe burst into the room, seemingly charging it with energy. Vibrant and captivating even while sitting in an armchair in her sister's home, Chloe's whole being appeared to be intensely focused on the task at hand.

Her mother observed that Chloe was an "extrovert" with "very strong leadership abilities" yet was also "an extremely sensitive child" who was "easily distracted."

While in public school, Chloe had been selected to participate in a special program for the intellectually gifted. On separate questionnaires, all three Longs rated Chloe either high or very high on each of ten characteristics of intellectually gifted individuals. Perseverance emerged in areas such as "[focusing on] boring, boring music exercises" (Lois); intensity was reflected in being "obsessed with certain topics"(Chloe); and a driving desire surfaced in her wanting "to know what was out in the world" (Chloe).

As to her role in the family while growing up, Chloe expressed, "I was the baby and still am. I was useful for entertainment. When my music started to take off, I became the star of the family. But my sister was more cute, more useful, more secure, more calm. My sister was the easier child. We were equally respected, but I was definitely the sillier child. She went to a conservative Christian school and I went to Manhattan to a conservatory."

Lois reported no asynchrony in Chloe's development.

Chloe described her surroundings as a child, saying, "I grew up in the country with lots of open space . . . in a neighborhood with only five small houses . . . in a good section. It was a comfortable house . . . lots of books . . . we had a horse." Her parents still reside there with the horse. Lois added, "We had chickens. We also had a goat. It just seems like homeschooling and goats go together. It turned out that Chloe was allergic to them."

Persons in Chloe's Life

Chloe conveyed a deep sense of attachment to her family, saying, "I was always closest to my family. I have always respected and loved my parents." Responses from all three family members attested to strong familial bonds. Between Chloe and her mother, there remains a very high degree of mutual respect, trust, demonstrated warmth, an openness in expression of feelings, and the sharing of mutual beliefs.

Chloe and her father affirmed a very high level of mutual respect and shared beliefs; however, both acknowledged a low (Chloe) to moderate (Brian) level of trust during Chloe's teen years. Additionally, although Chloe felt that her father had demonstrated a very high degree of warmth toward her, Brian regarded Chloe's demonstration of warmth toward him at that time as only moderate. Over the past several years, there has been positive growth from a moderate to a very high level with respect to their ability to express their feelings to one another and their overall relationship.

All three family members agreed that Chloe had a strong sense of belonging and sense of security. "I think it shows now that she is older," Brian observed.

As Chloe reflected on her sense of acceptance, she remarked, "I always knew that my parents loved me. I felt very secure. [But] when I was young, I really identified with the fact that I was funny and that people liked having me around. Later, I became afraid that would not happen anymore."

Her sister, who is four years older than Chloe, is her only sibling. Brian indicated that there was "a big difference in their personalities," saying, "Andrea was a very people-pleasing type in a good way. Chloe was a little more independent in that way." Chloe's sister attended public school, participating in the educational program for the gifted.

Chloe asserted that her relationship with each of her grandparents was "very close." Of her maternal grandmother, Chloe said, "[She] thought homeschooling was great. I used to go to her house once a week when I was homeschooled. She really loved doing projects with me." Chloe indicated that her paternal grandparents were "very loving" and supportive of her home education remarking, "They would trust what my parents decided to do."

Chloe's role models with respect to her music career have been certain teachers that she described not only as great music teachers, but also great people. Lois recalled, "When [Chloe] was in music camp, there was a boy two years ahead of her and she said, 'that's what I want to sound like.'" With respect to moral role models, Chloe responded, "I admired [my parents'] character and still do and that affects the way I act." Lois related, "It took until she was probably in her 20s, but she thinks her dad is a pretty neat guy."

Chloe's belief that she interacted well with all age groups was generally supported by her parents. However, Brian indicated that he believed that Chloe had only moderate interaction skills with her chronological peers. Chloe commented, "I always got along well with older children. They always thought I was funny. My musician friends were very often older. . . . I always got along with adults. I never felt out of place." Lois affirmed Chloe's excellent interaction skills with her chronological peers, but observed, "She was kind of threatening to other kids." Chloe

added, "I had two close homeschool friends. . . . but I was very cautious about choosing [homeschooled] friends because sometimes I thought they were weird. I looked forward all year to go to the summer [music] camps in Vermont and spend time with people my own age in cabins and dorms. Also, they were musicians and I always got along with them."

Chloe credited both her music teachers, who were very career-involved and pushed her to perform, and her various friends from different states at music camp with teaching her "how to relate to people from different backgrounds." She reflected, "I enjoy social interaction but I have to be careful because I am very distracted by it as well. I think that if I had gone to high school, I would have been too focused on my friends and I wouldn't have learned anything at all."

Chloe's Undertakings

Of her responsibilities in the family as she was growing up, Chloe remarked, "Chores were never a problem. We all helped out, but were not exceedingly pressured by it. If Mom asked us to do something, we pretty much did it."

Both Chloe and her mother agreed that Chloe was quite imaginative. Lois remembered, "She and her sister . . . had whole lives going with dolls and elaborate on-going stories. I was astounded at the detail with which they played school." Chloe recalled having a "certain route" in which she was "always running around and climbing trees." She elaborated, "Certain trees had specific meanings, like being the place

where certain fantastical characters lived . . . and a bush where the fairies lived. My neighbor and I used to imagine all kinds of things like pirates. . . . We had a very good time."

Brian identified music as Chloe's primary interest, followed by her interest in history. Chloe readily agreed, saying, "Obviously music is a great passion of mine. So much so that I sometimes forget that it is with me constantly. There is always something in my CD player, and in my car. I sometimes think that if you don't have a sound track on in the back of your life, then it is losing a lot of meaning. It is such a powerful way to affect the way you feel about a situation." Of history she admitted, "I was always obsessed with certain topics. Like I studied the French Revolution quite a bit. I became obsessed with Napoleon for a while when I was a teenager. I also liked athletics, the visual arts . . . I loved art history . . . and reading and literature."

Although Chloe was part of several distinct groups, she described her role in each of them as "not much different than [her] role in [her] family . . . always cheerful, and happy, and funny. I was sort of the leader at my camp during the summer after I had been there several times." When asked about Chloe's social contacts outside the family, Brian responded, "She had her camp group of musicians, and the group that went to Philadelphia for music. Then she had her local groups . . . the youth group at church and music groups . . . those were her main contacts." Lois explained, " Everyone wanted her. She was so young and

played so well. She got scholarships to summer camps. When she was 12, she began going to summer music camp for 2 weeks each summer; when she was 16, the camp music program ran for 6 weeks." During the school year, Lois continued, "Chloe played [every Saturday] with the Philadelphia Youth Orchestra which is the oldest running youth orchestra in the country."

With respect to a sense of efficacy, Chloe reflected, "I still sometimes don't feel equipped but then I wonder who is. I'm getting better at figuring out things, like how to change a tire or do my taxes. In personal situations, I felt well equipped."

Events in Chloe's Life

There were two periods of adversity in Chloe's life. Each of these periods of adversity stimulated a time of transition that in turn brought about positive changes. The first period occurred when she was in the latter part of the 4th grade in a public school. Chloe had become the focus of social ostracism by several of her female classmates. This situation was the catalyst for Chloe being educated at home. The second period of adversity will be described under the heading *Chloe's Pathways*.

Brian described additional transitional situations for Chloe, saying, "There were transitions [at summer camp] every year. Each year she was a little older and her experiences were a little different." When asked about Chloe's coping mechanisms, he replied succinctly, "Lois. That's probably what saved her. Some [people Chloe came in contact with] were nasty

and difficult. She would hide some things, but Lois brought most of them to the surface so they could be dealt with." Chloe identified isolation as her coping mechanism, adding, "[It's] taking the time to think for [myself] and decide who [I am], or solve a situation . . . not even asking advice but really figuring things out."

Rather than a particular event that propelled Chloe toward a specialization in music, Brian referred to a series of positive relationships with several of her music teachers. He articulated, "She would start out with one, and that one could only go a certain distance. And the next one that she went to was always a step in the right direction, the next level of respect and ability and inspiration. Each teacher she had was an inspiration at the right moment and at the right level."

As for Chloe's awards and accomplishments, her mother responded, "Well, lots." In addition to scholarships to music camps, Chloe "shared a win for the best junior soloist with the Lansdown Symphony. . . . She made the Philadelphia Youth Orchestra. . . . She auditioned [at Juilliard] and was accepted."

Perceptions of the Public Education Experience

Noting both "a reasonable start in the basics" (Brian) and "fine teachers" (Lois), Brian and Lois were in agreement concerning the strengths of the nearly 5 years of Chloe's public school education. Lois cited some good group activities such as plays and field day as another strength. Chloe listed no strengths.

A "humanist agenda" (Brian), described by Lois as "periodic objectionable elements in the curriculum," was seen by both Brian and Lois as a weakness in Chloe's public education, both at that time and into the foreseeable future. Chloe stated that it had been a "waste of time." Brian referred to that particular period of Chloe's education as "a social fiasco." Lois indicated that there had been "an inordinate amount of time with chronological peers . . . with little time left to be a kid."

Costs of Chloe's public education to the family were described by Brian as "peace of mind" and "wasted time." Lois developed these ideas citing the "time involved keeping tabs on the curriculum" and their concern that Chloe was not working up to her potential due to the "distractions in the classroom." The "challenge of correcting attitudes and behaviors unchecked or stimulated at school" was a third cost for Lois. Chloe listed none.

Perceptions of the Home Education Experience

All three Longs viewed flexibility and control over scheduling as a strength of Chloe's home education experience. Additionally, they each indicated a positive effect on their family, noting "the opportunity for time with family" (Chloe), a "heightened relationship between mother and daughter" (Brian), and the allowance for "greater family [influence] as opposed to peer influence" (Lois). Brian viewed the use of "good curriculum" as a strength; both Chloe and Lois identified the opportunity for specialization and pursuit of interests as a benefit. Chloe elaborated,

"That's one of the things I really enjoyed about homeschooling. I had the freedom to focus on something like that, and read a lot about it. I spent a whole year studying the history of England and France. I wasn't forced into doing US history five years in a row."

All three Longs described certain aspects of self-discipline as a weakness in Chloe's home education experience, such as "procrastination" (Chloe) and "scheduling difficulties" (Brian). Lois regarded it as "passing on some of my own weaknesses" to Chloe. Additionally, each mentioned the lack of expertise in certain subjects as another weakness. Brian said, "She wasn't really interested in science and math and it became a chore." Lois felt that more direct involvement of Brian in the actual process might have been beneficial.

Chloe listed no costs of her home education experience, although she remarked, "I wish I had been stronger in the sciences. [And] I wish I were a little more well-rounded." Brian believed that the academic work itself was not overly challenging, but that "Chloe always wanted to make sure that she could make it at the university level and wanted to do well enough to have options." Lois and Brian cited some financial costs although "it was not burdensome" (Brian). A "lack of certain study skills and loss of athletic opportunities" were also indicated by Brian. Lois regarded "anxiety about doing it well" as a personal cost as well as the fact that she "had to die to self" with respect to time.

Chloe believed she had used time constructively for the most part. Her father, however, remarked that "Chloe's biggest challenge was to stay on schedule." Chloe admitted, "I used to make these elaborate schedules and then I didn't follow them."

Chloe believed that her parents "never pushed her to succeed. . . . my parents always just wanted me to be happy. My father, I know, could be doing a lot more. He teaches high school physics in the inner city, but he's brilliant. But they are more concerned about the way they live their lives than by what they achieve. I put a lot of pressure on myself. I was very ambitious. I was always reading. I always felt I could be doing more, and becoming a more knowledgeable person. There was always something in the world I could be missing. I was independently driven."

"My parents have very high standards about how they live their lives, and they expect the same from us. They became Christians after they were married, about when I was born. I always feel that I don't live up to my parents' expectations for my character. I'm always working hard and now it's more of a personal thing."

Chloe's Pathway

Chloe and her parents learned of an opening at the Curtis Institute of Music in Philadelphia. Before Chloe had her audition there, her summer music teacher recommended that she play for a fellow teacher at Juilliard. After hearing Chloe play, the teacher arranged for an exception to be made to Juilliard's entrance requirements as Chloe had only just

completed her junior year of high school. At the age of 17, Chloe was accepted as a freshman at Juilliard on the condition that she complete her senior-level high school work concurrently.

It was during her sophomore year at Juilliard that Chloe experienced her second period of adversity. As Chloe related, “. . . things were going well at school and I was starting to be recognized for my playing abilities. I had a kind of breakdown as far as I don’t know if I was ready to be successful. I got really scared and I almost left school.” As earlier, adversity spawned a transition period. Chloe continued, “It was only for a week, but I remember that as a very changing time in my life where I decided to live a certain way, to redefine myself for who I was. Not by being talented but just being who I was, and knowing who God saw me as. Not caring if I succeeded or not.”

Lois echoed Chloe’s sentiments, saying, “In retrospect she said that what she had to deal with at summer camp prepared her to handle New York City. We’re talking about dealing with a lot of very intelligent artsy people . . . atheists, homosexuals, some drugs. She would probably say she would not have made it without the summer camp experience. For the first 2 years in New York, she was living the typical closet-Christian life, asking what she really believed. She wound up actually being the leader of the Christian fellowship group her senior year. It had been a crisis situation. I believe she was saved at the time, but it was a scary thing for a

young woman to walk into the arts and say, 'I'm a Christian' because there's complete ridicule."

Chloe, chosen as a soloist for commencement, graduated from the Juilliard Conservatory with a Bachelor of Music in French Horn. Shortly thereafter, she auditioned for a position with a symphony in a major city and won the position of principal utility horn.

Chloe views her present vocational pathway as her calling, explaining, "You can't be in my profession without a sense of calling, and an amount of talent that is a gift. I always knew that. Now I see the bigger picture, with the arts and theater and I have an aesthetic eye so I wouldn't have to necessarily be a musician, but I am grateful that I am independent due to a specific talent and that I can . . . pursue other interests. I have a career that I actually enjoy.

As to whether Chloe's present vocational pathway is compatible with her passions and gifts, her mother replied, "Seasoned musicians see something in her." Her father responded, "Yes. The best comment was from her friends at Juilliard who said [that] they don't know where Chloe will end up, but [they know] Chloe's focused."

With respect to the possibility of a significant change in direction in Chloe's vocational pathway, her father thought that, barring any injury, a major change seemed unlikely. He added, "But then when you get married, that could change everything." Her mother elaborated, "She has to live with the stress of knowing she may never win another audition

again. Her orchestra may fold. . . . It's almost like a professional athlete. She knows there could be nerve damage or an accident. . . . She said she may go back to school to study English literature. Now she's painting . . . she hates boredom. She called and said she wants to keep music as part of her life but she doesn't want that to define her. She knows too many people that music is their only world. And the orchestra is like a little Peyton Place . . . all kinds of divorces and fighting. She says that has to be her professional world and her friends have to be outside that. She said, 'I'm going to paint and I wrote a short story'. She's trying to create a balance in her life." Chloe acknowledged, "I have no idea if I will change my vocational direction in the future. . . . When you take an audition for an orchestral job, you either win it or you don't. In my view, that is God opening the door. If you win, it means God wants you to move and play with a different group of people."

Even though both Brian and Lois are content with Chloe's current vocational pathway, Brian admitted it would be nice if she were "closer to home." Lois expressed concern over the lack of Christian fellowship at this point in Chloe's life. Lois reported Chloe saying, "When you go for two weeks without bumping into a Christian, you feel kind of weird."

Chloe summarized her pathway thus far, "As far as my career, I made it, I'm employed. I still get pressure from my colleagues and my teachers who want more. I'm finding that as I get older, I want to be happy and not necessarily to be the principal horn in some big orchestra. I have

no urge to do that. I just want to make music, to stay close to music, and to be happy in what I was meant to be doing."

Chloe shared, "I really admire my sister having a family, and having a more flexible kind of life. Some day I would really like to do that but I don't see it in my future right now. At this point in my life, it is a growing time. I am more isolated now than I have ever been. I am far from my family. . . . I don't actually feel that settled. But I'm content."

If and when she has a family, Chloe would very much like to homeschool. She asserted, "It's a more efficient way to educate and provides the possibility for more growth of the child's personality and character."

The Masons

Introduction to the Masons

The warm, peaceful glow in the midst of the cold, rainy night emanating from the spacious two-story house in the well-to-do suburban neighborhood was matched by the aura of quiet harmony within. The Masons view their family as their primary ministry. None of the Mason's eight children has ever attended a traditional school. In addition to homeschooling their own children, now ages 6 through 21, Josh and Abby have helped and encouraged countless other homeschooling families over the past 15 years. They remain at the forefront of the home education movement both at the local and the state level.

Tall, attractive, with short brown hair, well-groomed in a long skirt and sweater, Abby was pleasant and soft-spoken and not in the least pretentious. In her mid-40's, she appeared to be at once both a no-nonsense person and one who is kind-hearted and charitable. Before Abby married, she had aspired to finish her degree in accounting, earn a degree in biology, and continue progressing toward upper level management at the credit union where she had been working for 4 years, first as a receptionist and eventually as a mortgage loan officer. She had attended college for 1½ years. Abby allowed that these aspirations had been partially fulfilled. While raising and educating their children at home, Abby has also been a graphic designer, a publication director, and an executive director and is currently co-owner of a family business and president of a non-profit educational organization serving over 14,000 families. She noted that she presently aspires to continue raising godly children who will serve the Lord in their life's work, to further develop their construction business, and to earn either a MBA or a degree in interior design.

In his early 50's, soft-spoken, nice-looking, conservatively dressed, and unassuming, Josh was both hospitable and readily willing to help. Surrounded by his children, and seeming like a benevolent patriarch, Josh's gentle manner may well be his strength. With a Bachelor of Science degree in Science Education, before his marriage Josh had aspired to become a successful builder and real estate investor. Earning

over \$50,000 a year, self-employed as a home builder and custom remodeler, those aspirations have only been partially fulfilled. Josh acknowledged that his present aspiration is to "serve the Lord with [his] whole being."

Parental Involvement Decision

Parental role construction.

Both of Abby's parents graduated from college, her mother going on to earn two master's degrees and her step-father earning a Ph.D. in mathematics. However, Abby recalled, "My mom has grown so much, but she had no vision for us growing up. She never encouraged us to go to school or to learn. . . . I always did well in school, but I never understood the point."

Both of Josh's parents graduated from high school. His mother worked for the FBI for many years, ending her career as the secretary to a divisional supervisor. After participating in WW II, Josh's father was employed by a company that produced fire engines, rising to the level of chief engineer in charge of production. They encouraged their three children to get college degrees, but Josh was the only one who accomplished that.

Both Abby's parents and Josh's parents are supportive of their home education and the families have frequent contact.

Josh's role as a father and Abby's role as a mother developed from an intensive study of the Bible directed by Abby's parents. Josh explained,

"Our job is to raise [our children] in the nurture and admonition of the Lord. As they grow up, we try to establish them and train them in a godly path, and then, when they are grown, we transfer that responsibility to God."

Abby responded, "I've always been comfortable being a woman. . . . I was very well-mentored after I became a believer. . . . There are so many scriptural guidelines for a woman's role with her family. . . . Mothering is central to everything. . . . My place is to be with my children and to love my children and to teach them. So my commitment was 110% to be there for them."

Abby described her parenting style as authoritative; Simon agreed. Josh described his parenting style as slightly more permissive than Abby's; Simon rated his father's style as merely authoritative.

Sense of efficacy.

Responses on individual questionnaires indicated that both Josh and Abby viewed their level of commitment and their capacity to work alone as very high. Abby also rated herself very high on persistence. They both scored high or very high on all remaining categories with the exception of self-discipline, and, for Abby, curiosity.

General opportunities for parental involvement.

Believing that their eight children have been entrusted to them by God and are their primary area of ministry, Josh and Abby continually seek opportunities to be deeply involved in the total development of each child.

Parental Involvement Form

Specific domains of skills and knowledge.

Home building, carpentry and woodworking, and real estate investing are Josh's main areas of skill and interest. Abby's areas of skill and interest exceed even the number of her children. Among her myriad of interests are child development; home and organizational management; business development and management; graphic, interior, and landscape design; editing and publishing; computer literacy; construction; and classical literature. Abby indicated that she is passionate about home education and design.

Mix of demands on time and energy.

Both Josh and Abby viewed their children, their business, and their extended families as the greatest demands on their time and energy. For Abby, home management and leadership in the state Home Education Association were also demands.

Specific invitations and demands for involvement from child, school or other sources.

One of the areas of family life covered during Josh and Abby's premarital training sessions with her parents was child-rearing. Abby elaborated, "My brothers were homeschooled in the 70s and Josh was a public school teacher. . . . During that 5 week time [of basic training for marriage], we learned what the Bible says about the biblical basis for marriage. . . . We decided we would trust God for all the children that He

would give us and that we would homeschool them. We knew, seeing my brothers, and [Josh's] being in the public education system . . . that is what we would do."

Abby had no formal training as a teacher. Josh's certification by his state Department of Education as a public school teacher had expired.

Mechanisms of Influence

Simon's educational structure included about 4 hours of learning and instruction 4 days each week; his school year lasted from 32-35 weeks. In his primary years, instructional responsibilities were largely assumed by Abby. She explained, "Once Simon learned to read, write, and do basic math, [his] materials were primarily self-instructional. [He] would go through the book and then if [he] had a question, [he] could bring it to me and we would work through the things [he] did not understand." Josh described his teaching role as generally more hands-on.

Both Josh and Abby actively employed direct instruction and modeling. Josh also indicated a high use of reinforcement. Abby, however, questioned the exact nature of the concept of reinforcement, indicating that she did not use it in the sense of tangible rewards and bribes.

Tempering Variables

Developmentally appropriate involvement strategies.

According to Josh, Simon and his siblings were intentionally "very isolated when they were young". Abby elaborated, "When they were growing up, they were very sheltered; when they were younger, I was

pretty much with them all the time." She continued, "I saw that I really needed to shelter him and also expose him to a lot of resources and educational materials. We always have tried to have an educational environment in our home with lots of tapes, art supplies, books, models, building supplies, and creative outlets for them to do projects. I guess I always thought of myself as a resource person. As [he] got older, if I saw [that he might] be interested in something, and then if I saw a book or article about [his] interest . . . if there was a seminar, I would point it out to him. . . . but really just being a resource person."

Simon remarked that in addition to being sheltered with respect to interaction outside the family, they also had no television. When asked if he felt as if he had missed something by not having a television, he replied, "No, not at all. TV is like a trash can that you turn on in your living room." When Simon was about 10 years old, his family did get a TV monitor and a VCR so they could watch certain videotapes.

In describing Simon's learning style, Abby said, "He was a plodder. He likes to study things in depth and think about them. He's not a fast reader, but he really absorbs . . . When he reads, it is his. He understands it and makes all the connections. He is very visual."

Simon's total home education experience was individualized. Abby elaborated, "Everything was always individualized. He could do math when he was younger . . . he could do high level math, but I had to find books that did not have a lot of word problems because of his reading

inability. We made allowances in that area. His spelling skills did not catch up for a number of years because spelling is a function of seeing the words over and over and if you do not read until you are almost ten, then you miss a lot of years of seeing those words. He is not the best speller in the world, but we consciously worked on that. Also, as for writing, we did very different things. He didn't do a research paper until he was 15, but he had to write something every day."

"For high school, he never did a formal science class. He did one half of a semester in biology but other than that he never did chemistry or physics or earth science. But he read books and was reading Einstein's theory of relativity and a metaphorical fugue on minds and machines. So he never did high school things. He built things; he read; and he had his grandparents. So we had a very different science education."

"We knew from the age of 2 that he was engineering material. It was a little scary knowing that he did not have all of that formal science training, but we just never forced him to do textbook science. He learned physics from reading and building a mini-bike. He learned about ratios and gears through hands-on work and reading. Both grandparents and Josh would recommend books for him to read. It may have taken him 2 or 3 months to get through one of these books, but he would read it, discuss it, and that's how he learned."

Simon prepared for the SATs by practicing with the use of a computer program. Although he never needed to actually take the test, he admitted that he had been "getting good scores on the practice tests".

In describing Simon's educational strengths, Josh pointed out that Simon had "always done well in math . . . and he is also a good writer. He is a good student, not quick but focused. I took him to Toastmaster's for a couple of years and he learned to present well before a group." Abby described Simon's strengths as his "interesting combination of right and left brain. He is very precise and orderly . . . he has a lot of structural aptitudes and mechanical abilities . . . but he has that other side of him that loves literature."

Josh observed no educational weaknesses in Simon; nor did Abby.

Fit between parent involvement actions and parent educational expectations.

Josh expressed, "My greatest expectation for my children is that they would all become productive assets to the community serving the Lord . . . that they would also be life-learners and original thinkers." Abby acknowledged that their expectations for Simon were "high." She explained, "We always wanted him to be the best he could be. I wanted him to be challenged and not conform to any preconceived thing." Specifically, Abby's expectations for Simon were that he develop "godly character," be "non-peer dependent and well-rounded," be "classically literate," and pursue "academic excellence."

Both Josh and Abby agreed that their involvement actions strongly supported their educational expectations for Simon. Simon viewed his parents' expectations as an excellent fit with his own expectations. Abby communicated that Simon had fulfilled her expectations. Josh, commenting that "we are a work in progress," allowed that "it is happening" with Simon.

Simon and his Surroundings

Dressed in a zippered vest, short-sleeved shirt, and khakis, 19-year-old Simon was tall, lean, clean-cut, and handsome. Sitting across the table in the family's study, he was serious yet engaging. He seemed to be a wholesome, centered young man who knew who he was and where he was heading.

Described by his mother as "precise, careful, and confident," both parents believed that Simon is intellectually gifted. Abby cited early childhood behaviors such as his extensive vocabulary, "ability to focus on tasks," his interest in a "wide variety of studies," and his IQ score on a well-known intelligence test as indicators. Simon agreed that he was intellectually gifted, but he added, "just in the sense that I am above-average, not that I am a genius." He also referred to his results of testing by the Johnson O'Connor Research Institute that indicated his having "a very high ideaphoria, the ability to generate ideas, and structural visualization."

With respect to a list of characteristics of intellectually gifted individuals, all three Masons rated Simon very high on commitment, persistence, curiosity, self-discipline, and a capacity to work alone. Josh and Abby rated Simon either high or very high on the remaining five characteristics. Simon, however, rated himself moderately on ego-strength and insight and moderately low on motivation and driving desire. All three Masons agreed that Simon's overall development had been relatively even although Abby mentioned a "slight delicateness about his health."

When asked about a special role in the family, Simon replied that each of the family members had specific tasks but that none of them were special. His mother observed, "He is the oldest son, the first son, with one older sister, so he really has a lot of the characteristics of the first-born. When he was little, I always liked to say that he liked the rules and liked everyone else to follow the rules." His father articulated Simon's position, saying, "He is the oldest boy, so it's only natural that he would assume a leadership role. He does that very well. He has a strong sense of right and wrong."

Simon and his family have lived in four different subdivisions, the last three of them being well-to-do, since moving to the small city when he was quite young.

Persons in Simon's Life

Simon attested to a strong, positive family bond, saying, "We were always close and we never felt distance." Between Simon and his parents

there continues to be a high degree of mutual respect, trust, demonstrated warmth, shared beliefs, and the freedom to express feelings. Their overall relationship remains very strong; his parents continue to clearly define and consistently enforce rules and Simon consistently obeys his parents.

Simon has one sister who is two years older than he as well as six younger siblings ages 18, 16, 13, 11, 9, and 6. The 13-year-old is his only other sister.

Simon reported that his relationship with each of his four grandparents was very close and that he "interacted extensively with them."

His grandfathers, in addition to his father, were his primary role models. Simon recalled, "When I was little, I wanted to be a mechanic. . . . I designed all kinds of mechanical things. My dad's father was really a role model for me in that because of his very strong mechanical bent. Whenever we would get together, we would always talk about some new problems like how to drive piles at a pier or how to fix a tractor or something like that." Of his maternal grandfather, Simon said, "I would talk with my grandpa about odd subjects like topographical numbers theory and weird things like that. He really sparked my interest." Simon's father indicated that Simon, at about 12 years of age, designed and built a mini-bike from parts. Josh recalled, "I taught him how to weld, how to figure gear ratios, and how to install brakes."

Abby also identified one of Simon's uncles as a possible role model. Simon included his mother as a role model. He concluded, "My parents always did what was best for us. They had a very good handle on the purpose of education. It was to train the children in their beliefs, but it is not just like engraining your children in your beliefs; it is to develop them so that they know what they believe and they can defend it and live a successful life. The purpose is not to live a successful life but to be honoring to God and live with Him forever. Our parents and grandparents really instilled that in us. They did devote a lot of time to training us and to exposing our minds to new things and that is something I really feel very fortunate for. A lot of the people that I know and work with never had any experience like that so they are entering their truly formative stage without that kind of preparation, without that counsel and guidance."

Simon and his parents agreed that he interacted very well with all age groups. His primary contacts were with his immediate family members, extended family, and the local home education support group.

Simon's strong sense of security, of belonging, and of acceptance as he matured was affirmed by each of the Masons as Josh said, "Yes, certainly"; Abby responded, "Yes, absolutely"; and Simon asserted, "Yes, definitely."

Simon's Undertakings

When asked if he had a strong sense of responsibility and of usefulness to the family, Simon replied, "Yes, I helped with the little kids

extensively." Josh confirmed this, adding, "[He] had chores even when [he] was little." Abby noted that "he always participated [in family activities]."

Intentionally isolated for the most part from his chronological peers and with no television, Simon recalled that he and his siblings "role-played as the Swiss Family Robinson for hours." Abby remembered that her children played it "for years." Simon continued, "If we wanted to invent something, we would do it. We always played with Legos. . . . We would take on different characters and imagine that we were in different places and that was good."

As for imaginary friends, Josh commented, "We always discouraged imaginary friends and figures because if you have them believe in Santa Claus when they are young, when they find out he isn't real, then they begin to question the existence of Jesus and God." Abby confirmed this, saying, "We specifically avoided fantasy, but rather gave them things that are true, honest, just, lovely, and of good report. It was their teen years before they read *Alice in Wonderland* and some of those other books."

Abby identified several interests Simon had over the course of his childhood, saying, "He has gone through several things. I know building things with Legos was a many-year-long interest. He also put a long time in studying WWI and WWII . . . for years he would go to the library and bring home stacks of adult books and read about the wars, the planes, the

armaments . . . he was fascinated with history. He has always loved history. He has gone through different mechanical stages. When he was . . . only seven . . . he was building adult models like the USS Constitution which had 100 exploded diagrams. And with little tiny tweezers, he put that together. He was really passionate about building models for a while, and then he was passionate about building his mini-bike for a while. He had a blue tailed skink that he caught in the yard. . . . He had it for years; it hibernated every winter and kept growing bigger and bigger and laid eggs. He's interested in soccer and sailing."

Simon reported that he has always been interested in mechanical things. He was part of an amateur radio club, a radio-controlled model airplane group, and built a mini-bike from parts. Josh recalled Simon's interest in aviation and his being part of a *Young Eagle's* program which matches pilots with fledgling aviators. He successfully passed the ground portion of the Private Pilots License. Josh added, "He read a lot of books and really enjoyed it, but came to the realization that it was too expensive." After that, Josh reported it became "motors and cars. He bought himself a little BMW and actually got it running."

Simon and his siblings went on educational field trips sponsored by the local homeschool support group and participated in some of the group's recreational activities, art classes, and co-op classes. As he grew older, Simon was a member of a debate team and attended Toastmasters.

With respect to his sense of efficacy, Abby described him as "very confident;" Simon felt well-prepared for further education.

Events in Simon's Life

There have been no periods of adversity in Simon's life. Abby communicated, however, that they had been able to avoid, through home education, a potentially serious and lengthy period of adversity for Simon. She articulated, "His biggest frustration was when he couldn't read. He was ready for that intellectual stimulation but he was just unable to read. We did everything we could. [His sister] could read by the time she was 2, and by the time she was 3, she could read the King James Bible fluently. But with Simon, we just kept waiting. He was [age] 7, 8, 9, and we just kept waiting. That was challenging for him. Also, he really loved to do models but his fine motor skills were frustrating to him sometimes. But he did have excellent dexterity when he was young."

"[Simon] really didn't have any rough transitions," Josh asserted. "Abby and I try to help [our children] through any changes. I think that due to lack of peer pressure or maybe the lack of fear of failure, his adolescence was a real joy. It's really special when they go from being a young child to a friend."

With respect to Simon's character development, Abby had observed what she smilingly referred to as his one fatal flaw. She elaborated, "When he was 16, he developed a cynical attitude . . . that made him feel superior . . . He observed two men arguing and had this

insight that that was where he was heading . . . he repented. . . . From that point on, he was so pleasant, smiling, and happy. He just changed. After that, God began to open doors for him and really bless him.”

Simon documented a series of events that propelled him from the mechanical realm to electrical engineering. First, he took a calculus class at the local community college which “sort of took me to another level of looking at things in a different way. Then I went on a speaking trip with my [maternal] grandpa. . . . I was exposed to some of the leading engineers in the country. . . . I realized that [engineering] was definitely something I was interested in pursuing. . . . [Then] I took a class in classical mechanics, called statics. . . . I did really well and found it interesting, yet I also found it boring because I have an intuitive sense for any kind of force. . . . That was like a revelation because I discovered that in the mechanical world, you are really limited. Then I realized that I didn’t know anything about electricity . . . but knew I wanted to study it. . . . At that point, I also realized that [although] I had always been a believer in God, I realized . . . He knows what is better for you than anything else . . . so I started studying something I knew absolutely nothing about.”

Simon took no Advanced Placement courses. However, at age 16, during his freshman year in high school, he took a placement test and began taking math classes at the local community college. He related, “By the time I did my junior year in high school, I had taken Calculus I; in my senior year in high school, I started taking a full load at the community

college. When I graduated from high school at [age] 18, I was already a sophomore in college. It was pretty cool." Simon achieved a 3.8 GPA on a 4-point scale in high school.

Perceptions of the Home Education Experience

Documenting several strengths, a single weakness, and few costs, all three Masons regarded Simon's home education experience as an extremely positive one with respect to both his academic education and his socialization.

Both the development of Simon's ability to think and learn independently and the enhancement of the close relationships within the family were identified by Simon and his mother as strengths of his home education experience. Abby also cited Simon's strong knowledge base as a strength while Simon noted the flexibility to develop his interests and his firm foundation in absolute truth. Josh conveyed what he believed to be the benefits of Simon's home education experience by describing Simon now as a "dedicated, consistent, and honest young man [who] has been a good example of home education and a godly young man to his counselors and associates at school and work."

Simon viewed the lack of laboratory facilities as the only weakness of his home education experience. Abby indicated the need to pay for educational materials and the requisite time commitment for her as the only costs of Simon's home education experience.

Abby believed that Simon was "not unduly pressured." As Simon reflected on his home education, he confirmed this, saying, "I guess I was kind of odd in the fact that I didn't really learn to read until I was quite old, and they never pressured me to read. When I was in grade school it was like . . . 'here is the work you need to do, so just do it.' It usually ended up that after our mom taught us to read and do basic arithmetic, we became self-taught. It almost seems like the hand of God on my life that I knew when I started doing math that somehow math had something to do with the rest of my life. So I never had any trouble being motivated. I didn't know what I was going to do, but I knew math was the foundation. So I would spend 4 hours a day to do what most people would spend an hour to do as far as math was concerned because I just kept working at it. But I never felt negatively pressured. Just encouraged."

Simon asserted that his education had been "excellent preparation" for college. He elucidated, "My whole family, none of us is really formalized. It was taking things as they come. Just do what you need to do at that moment. I like that pattern. I am not a big fan of formalized structure. Growing up, I was what you would call a challenged learner. I was given freedom to study what I wanted to."

"Basically, my parents gave us two things in grade school. I had to learn English, and I had to learn math. The math was easy. I had to work hard at it but it was something I understood and something I could do. I had to work harder at the English. What my mom did, in my early teens,

was to have me read something and then write a paragraph on it every day. She didn't read the paragraph . . . sometimes she would . . . but that just freed me up in a low pressure way to get into writing."

"[When I was in] my freshmen year of high school, one of the professors at the College of William and Mary, a homeschool mom, taught a class at a local co-op and I took it. We would read various books like *The Odyssey* and some of the other classics. We had to write about it. Before that, the only formal writing I had done was to pick up an encyclopedia, read something, and then write a paragraph on it. I had done that for about a year or so. So when I went to her class, I had probably read almost the entire encyclopedia because it was just so interesting. She said that I was a better writer than most of her freshmen [college] students."

"My mom [had me learn grammar] even though I hated it. It turned out to be a good thing. My writing in English is correct and I don't have many grammatical errors. I feel that is very, very important, especially in engineering. . . . It helped me because I can communicate now. At my work at NASA Langley Research Center, probably half of what I do there is presentations and communications to high level people in the NASA administration."

All three Masons agreed that Simon had been challenged and had used his time constructively during his period of home education.

Simon's Pathway

Josh believed it was important for Simon not to feel pressured to attend college. He explained, "It's not our imposition, but looking for the Lord's direction. For the same amount of money it would take to send a child to college, you could set [him] up in a business." Simon did, however, feel called by God to continue his education by attending college. He received a full National Science Foundation scholarship for his first two years at the community college. He explained, "It wasn't like I ever had to think of what I wanted to do in life when I got [to college]. I just always knew I liked to work on things. I liked to create. It was like touching the mind of God. We are made in His image, and He is the Creator, so when you are in a profession of creating things, of innovating . . . you can get close to God when you do that. . . . I don't see it as something mystical. God has instilled it in us and we are made in His image and we have part of that creative genius in us. I feel that God has led me to a field where the whole focus is to do that kind of thing . . . to create new things."

Simon credited his smooth transition from home education to higher education to his having started taking courses at the community college while he was still in high school. He said, "I didn't have any trouble. I felt like I had an advantage over other students. . . . I knew how to work because all of my material was self-paced and I knew that if I didn't work, I wouldn't get anywhere. So it was very important to keep motivated and get

my work done. After those 2 years at community college, I moved up to [the] university. It is a lot harder, but it's really good."

Simon also pointed out that "at the community college, most of the people [in class] are working individuals. They are not goofy college kids having a good time partying." Simon graduated magna cum laude from the community college with an Associate Degree in Electrical Engineering.

Simon received another National Science Foundation scholarship as well as a Governor's Technology School academic scholarship to attend a university in his state allowing him to enter as a junior and to earn a joint degree of Bachelor of Science and Master's of Science in Electrical Engineering. Abby said, "[His professors] are talking to him about going into the Ph.D. program which somehow steps over the masters program." Josh elaborated, "There is a shortage of Americans in mathematics and engineering. Our country got way behind in math and science. Many of the professors are really excited about Simon. . . . Several of the men at NASA have taken an interest in Simon and encouraged him in his studies."

Simon described a difference between the community college and the university. He said regretfully, "The professors don't have much time to talk to you outside of class. In community college, you could do that; you could go to their office and talk to them for an hour about what they taught. But at the university, you can't do that. I see that as a kind of negative thing. They give you really challenging things and a lot of students don't

really understand the concepts, so a lot of them seem like they are just scraping by. I'm a junior right now and a lot of people in my class are seniors who are just struggling along. That intuitive sense of what you are doing is very, very important. You will always struggle if you do not have that intuitive sense. And a lot of them don't have a fascination with learning. I feel that is something that I have been given through my environment. I really have a fascination with learning. Especially the abstract concepts we have to learn. Always in class, I get a shiver up my back when I think about that. We are always learning new ways to quantify the world; a new way to represent strange things you never would have thought of. To me, that is just something wonderful, but a lot of people view that not as something good, but as a new abstraction that they somehow have to memorize and a burden that they will be tested on. But through my environment, I had been exposed to enough abstractions when I was little that I was able to see that abstraction and to apply it."

On his understanding of education, Simon articulated, "I think of education . . . as a tool box. Each new thing you learn, is like another tool. If you studying philosophy, that gives you a tool. If you study math, those are powerful tools for classifying things. [As] you learn, you are making up this great wall of tools. When you come to a new idea, you can grab one of those tools . . . and you can match them together, and you can learn something new. I believe that the fundamental thing about learning something is to match it to something else. That's the most important

thing. Complete novelty the human mind can't assimilate. So education is the process of acquiring more little bits and pieces and . . . matching them together to create something new."

"I was always exposed to spiritual ideas since I was little. We read the Bible; learning about God was a big part of our education. . . learning about life, what His will is for our life and talking to Him directly. So that is one tool. In the mathematical realm, a lot of times I see analogies between the way God works and the way these equations and concepts work. When you match these things to each other like that, you can use these tools from all branches and apply them to learn something new. I feel that is really powerful."

Simon is also working one day each week in a student program at NASA as a data visualization specialist and chief technology officer. During the week, he stays with his uncle who lives closer to the university. Simon returns home on weekends.

All three Masons heartily agreed that Simon's current pathway was a good fit with his interests and abilities.

None of the Masons saw any radical change in Simon's pathway in the future. Simon allowed, "The only change I could possibly conceive of is that I would start working a lot more with computers."

All of the Masons are content with Simon's pathway. Simon said, "I came to the realization when I first started college that whatever God has in store for me is so much better than [I] can imagine. . . . He knows

exactly what your greatest potential is, so if you just free yourself up to follow Him, instead of leading yourself in ignorance, then God says 'all things work together for good for those who love Him and are called according to His purposes' (Romans 8:28). As long as we make sure we are doing what He wants us to do now, then everything else will work out. It's a real burden off your mind. You don't have to worry about the future."

When the time comes, Simon definitely intends to homeschool his children. He asserted, "Home education gave me an advantage in life and I would like to pass that on to my children."

Summary

Descriptive findings from four case studies of intellectually gifted young adults and their parents have been presented in this chapter. Signifying a transition from the descriptive to a more comparative mode, emerging themes resulting from within-case analyses and potential patterns resulting from cross-case analyses are presented in the next chapter, thereby setting the stage for the final chapter.

CHAPTER FIVE

EMERGENT THEMES AND POTENTIAL PATTERNS

For each of the four cases described in Chapter Four, this chapter presents a narrative summary and visual data displays of the emergent themes from within-case analyses and potential patterns from cross-case analyses. The summary of analyses across cases includes identification of links to relevant literature.

Emerging Themes: Summary of Findings from Within-Case Analyses

The presentation of emerging themes in each case, determined through grouping of constructs identified in Chapter Four, progresses according to the following categories: (a) parents, (b) perceptions, (c) passions, (d) pathways, and (e) congruence of the triad.

Emerging Themes found in the Brown Triad

Parents

Parenting philosophy with respect to socialization.

Curt, and to a great extent, Karen believed that the goal of socialization as widely accepted and practiced in the United States was to “make you fit into society” (Curt) and as such was “at cross-purposes [with education].” Their desire was that their children “not be socialized, at least as much as possible . . . [that they] be socialized on [our] terms.” Curt felt that “isolation [from non-familial peers] was more helpful than harmful” for his children. Esther agreed that children should be taught to be

independent; yet she strongly believed that they need to be taught how "to deal with other people and live in the world."

Parenting philosophy with respect to education.

Curt, and again to a great extent, Karen, believed that the purpose of education "is trying to make you question society and to think for yourself." They were both "unhappy with the way [traditional] education was being done in general" (Curt). Karen defined learning as "just part of life."

Esther's primary educational concern remained a socialization issue, saying, "We've got to start somewhere – we might as well start with [traditional] school and let them learn to deal with other children there."

Perceptions

Relationships.

While Karen rated herself ... with respect to relational skills on a self-respect questionnaire, Curt rated himself low on relational skills, had infrequent contact with his parents, and considered the emotional needs of each of his 10 children as the greatest demand on his time and energy. Esther and her mother both reported that their relationship was a warm, close one, sharing similar beliefs and being able to express their feelings to one another. Esther perceived her mother's parenting style as authoritative.

Curt reported that Esther displayed warmth toward him occasionally,

although she stated that she "always had a difficult time with my dad."

Curt believed that Esther "felt things intensely, but didn't express herself a lot." Esther perceived her father's parenting style to be authoritarian while Curt perceived himself to be slightly less authoritarian.

Esther expressed uncertainty about her father's expectations for her saying, "I always felt he wanted me to do more or something different than I did and that I wasn't as motivated as I should be." Curt observed that Esther had "very little interest in anything theoretical" while describing one of Esther's sisters as "a political radical," adding that he was "very pleased about that."

Curt recalled taking Esther to college saying, "When we dropped her off . . . I think she wanted to get a lot of distance [between her and the farm] but at the same time, I think she was fearful." Esther stated, "It just doesn't make sense to me to keep [children] home for 18 years and then say, 'Okay, have fun.'"

Once Esther began her college education, Curt recalled, "She chose to always stay [at college] and work through the summers . . . She was constantly choosing to stay away." Esther believes that their relationship has improved somewhat since she married, although she still finds it difficult to express her feelings to him and still views their belief systems as differing.

Parenting practice with respect to socialization.

All three Browns perceived Esther to be very socially-oriented. Esther had enjoyed her early childhood in an urban setting where they "saw a lot of people and there was a lot more social interaction." Moving to an isolated farm had been difficult for Esther since, in her words, "we hardly went anywhere and didn't see a lot of people." Curt explained his perception of the move saying, "I always wanted to be more isolated, so [the isolation] wasn't something I could really empathize with . . . even though it was very frustrating to her . . . she so much wanted to be part of society." Karen remarked that Esther "probably resented not being able to go into town for the first few years."

Esther had a "whole scenario worked out" with imaginary friends who "were always there."

Parenting practice with respect to education.

Dissatisfied with traditional educational methods and goals, Curt and Karen were strongly committed to home education, never considering public education as a viable alternative. Curt reported that "every once in a while a few of [our children] would get together and stage a rebellion, wanting to go to public schools. But the longer we do [homeschooling] and the more we see public schools, the less inclined we are toward public education." Karen remembered that Esther "spent quite a bit of time wanting to go to school like the other little kids." Esther viewed her lack of public education as "a lost experience of childhood."

Adversity and transition.

Esther saw the move to the farm as her only adversity. Coming at age 12 when she was also experiencing physiological changes, the move brought not only isolation but also a different way of life – no electricity or indoor plumbing, acres of building-less vistas, and gardens instead of grocery stores. It also shook Esther’s sense of security. The tenuous nature of the family’s financial position made Esther “very uneasy.” Esther’s sense of responsibility deepened as she “was in charge a lot. She just took over the house stuff . . . as long as she didn’t have to go out into the garden” (Karen). Curt believed that Esther at times “might have sensed too much belonging, a kind of inescapable belonging.”

A second transition for Esther was leaving home to attend college. Karen thought Esther had done “very well” at college except for having to deal with the dichotomy of living standards between wealthy college students and Esther’s home with “cow and sheep manure.” Curt, however, saw Esther’s transition to college as “difficult,” although he believed that, due to her earlier home education experience, “she was able to take unpopular stands on different things that I don’t think she could have done otherwise.”

Esther, too, saw her transition to college as difficult, but in a different way. Being unfamiliar with such things as note-taking, science labs, sports activities, and research papers, she “spent the first year just freaking out.” A self-proclaiming perfectionist, however, she did graduate

with a 3.72 GPA on a 4-point scale and a listing in *Who's Who in American Colleges and Universities*.

Passions

Both parents hoped that they had encouraged Esther to have the “strength of character to choose to do what she loves to do rather than pursue economic security” (Curt) and, in Karen’s words, “to pursue her passion rather than money.”

When deciding upon her college major, Esther wavered between her two passions, music and piano performance and teaching children. Her voiced desire to teach received strong discouragement from “a lot of people [who said] that I had never been to a school, so I couldn’t teach in one.” Esther chose to major in music, saying, “That’s what I could do.”

Pathways

Although music remains Esther’s passion, she is not certain that she views it as her calling; she has discovered a propensity for “teaching music one-on-one.” Married with two young daughters and teaching music part-time, all three Browns are content with Esther’s present pathway, seeing it unlikely to change radically in the future. Karen described Esther as “a good teacher and mother;” Esther is “happy with the way things are now.”

Congruence among the Brown Triad

A cursory perusal of the Brown triad data in Chapter Four would seem to reveal a large measure of harmony. All three Browns agree that Esther is intellectually gifted, an extrovert, a perfectionist, an independent learner, had the role as organizer of the family, had excellent multigenerational interaction skills, and had imaginary playmates. They all agreed that their practice of home education was inconsistent, as was its level of challenge. However, when focusing on the emergent themes presented in this chapter, an alternative picture develops (see Figure 1). Although congruence between parents is extremely strong, congruence among the Brown triad is slight. Esther's parents are in agreement in all major areas, differing only in their perceptions of Esther's transition to college. Conversely, Esther and her mother disagree in every area listed except for their strong positive relationship, belief in parental responsibility for determining educational practice, and Esther's pathway.

Except for their belief in parental responsibility for parental responsibility in determining educational practice and agreement as to Esther's pathway (although Curt has some concern that it does not fully reflect Esther's gifts), Esther and her father also disagreed in all major areas indicated, including the strength of their relationship. Despite seeming agreement concerning her transition to college, each of them had a different perception of the nature of her difficulties.

Curt

Karen

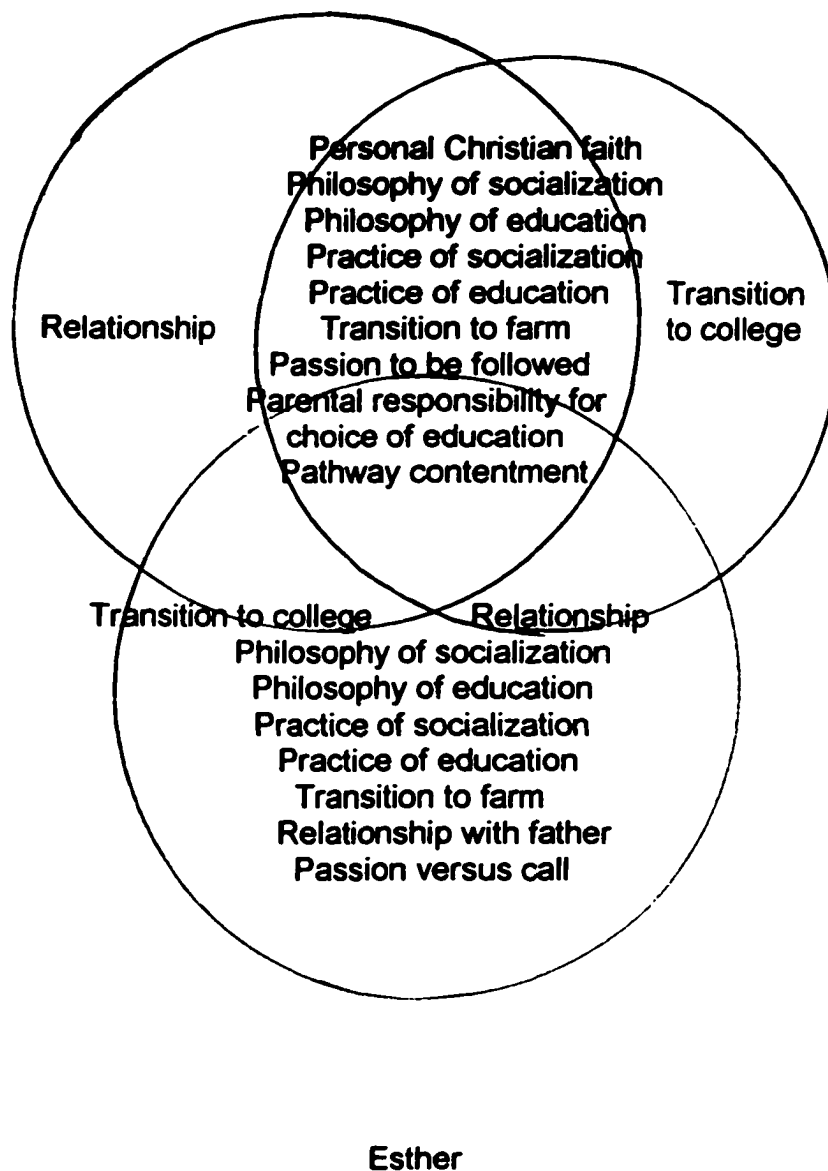


Figure 1. Congruence of the Brown triad.

Emerging Themes found in the Davidson Triad

Parents

Personal faith.

Each of the Davidsons expressed a personal Christian faith. Greg described his parenthood as "evidence of his redemption" and spoke of a calling to pastor his local congregation. Bev credited the teaching of a national Christian leader with providing the foundation for her maternal role development. Serena spoke of contentment in following the Lord's leading.

Parenting philosophy with respect to socialization.

Greg and Bev desired "a healthy separation from peer culture" (Greg) and "the strength of character necessary for applying personal faith in all areas of life" (Bev). Greg described culture as a "very powerful influenceIf you can establish your identity in conflict, that's a very strong thing. But if you try to establish it in a separate, monastic thing, I don't think it is as strong. You are really distrusting God to carry you in the midst of that cultural conflict."

Parenting philosophy with respect to education.

Bev readily admits that her earliest expectations were "fear-based" rather than directed toward "reaching a certain goal," due to her fear that "doing homeschooling wrong" would prevent Serena from attending college. Bev and Greg soon progressed to having a dual concern for both her academic and her spiritual development. Academically, they hoped to

foster in Serena the desire and ability to learn, the self-discipline to work alone, and a mastery of the basics.

Perceptions

Relationships.

All three Davidsons agreed that they shared a close, rewarding relationship that included similar beliefs and faith. They also demonstrated a very high degree of respect, trust, and warmth toward one another. Limits were clearly defined and consistently enforced; Serena usually obeyed the established rules. Both Greg and Bev employed an authoritative style of parenting.

Parenting practice with respect to socialization.

Greg and Bev actively sought opportunities to be directly involved in their children's lives. Bev stressed that they worked hard at finding socialization areas that had both positive and negative side effects, but that there was always [one of us] there supervising what was going on in terms of her reactions."

Interaction was fostered with each of the grandparents (Serena saying that she had wonderful grandparents) and with multiage children (Serena identified her siblings, neighborhood children, and homeschool groups). The church was singled out "the big social arena" (Serena).

Parenting practice with respect to education.

Employing an evolving curriculum in combination with mastery learning, Bev methodically moved along a continuum from direct instruction toward Serena as a self-learner. At the same time, she was also challenged to release Serena from perfectionism. Greg became directly involved in teaching higher level courses.

Adversity and transition.

Serena requested home education; her transition from Christian school to home school was a smooth one.

Her mother's fluctuating health was a family adversity. When Bev was ill, "Serena stepped into the mother role and assumed a lot of the responsibility beyond her time and years. I think that affected her" (Greg).

Serena's transition to her teenage years was combined with adversity as many of her friends began dating. Instead of participating in casual dating, Serena's parents asked her to "remain under her father's authority and protection," practicing courtship. Serena agreed.

Serena concluded, ". . . I think everything came out just fine. I don't regret anything. A clear sense of right and wrong is a good thing to have."

A third transition developed as Serena completed her high school level studies but "didn't have a clue about what [she] wanted to do." She agreed to her parents' request that she remain home for another year to pray about her future direction. Serena acknowledged that she "saw God's hand on that, working through my parents." It was during this time that

Serena physically cared for her dying grandmother and discovered a love for nursing.

Her transition period concluded the following year as she easily adapted to her life as a college student. Serena credits her smooth transition to her self-study skills, her science and math skills, the fact that she continued to reside at home, and that the student body consisted primarily of working adults.

Passions

Greg and Bev described the Bible as their main passion. They believe their primary call is to each other, to parenting their children, and then to their church. Serena expressed a passion for literature but views her present vocation as a calling at this time in her life.

Pathways

Both Bev and Serena view her present vocation as pediatric nurse practitioner as a good fit with her gifts and abilities. Greg expressed some reservation as to the fit indicating that within a few years, he believed that change would be likely. Both Bev and Serena agree with the likelihood of change. Serena desires to become "a stay-at-home mom" and "[if] the Lord leads," she and her husband will engage in home education.

Congruence among the Davidson Triad

The Davidson triad data presented in Chapter Four would seem to reveal a very high degree of congruence with agreement in areas such as Serena's characteristics (see Table 1), her role of organizer, her use of role-play, and the degree of intellectual challenge during her time of home education.

The Davidson triad continued to appear to display strong congruence with respect to the emergent themes identified in this chapter (see Figure 2). They share a common personal Christian faith, a common philosophy and practice of socialization and education, reciprocal relationships, and similar perceptions of Serena's transitions and adversities. Additionally, rather than equating passion with call, they each seem to identify a perceived designated role as a calling.

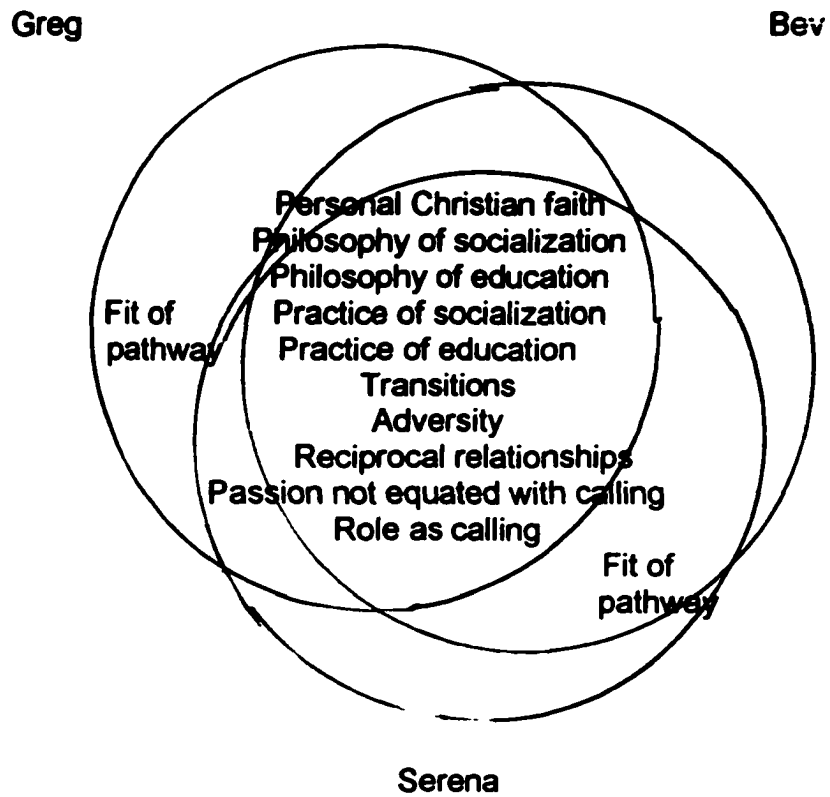


Figure 2. Congruence of the Davidson triad.

Emerging Themes found in the Long Triad

Parents

Personal faith.

Each of the Long triad spoke of a personal Christian faith and the impact of this faith upon their actions, with Lois aspiring “to become more like Christ, growing in knowledge and wisdom;” Brian aspiring to be “a quality teacher . . . and a good Christian witness to [his] students;” and Chloe trusting in God to open doors for her, “giving her direction in life.”

Parenting philosophy with respect to socialization.

Brian and Lois had agreed “even before we were Christians, that when children came along [Lois] would not work.” They believed that Chloe was “very influenced by her chronological peers” and that she should have “a more balanced lifestyle” (Lois) in a good environment conducive to physical, social, emotional, and spiritual development.

Parenting philosophy with respect to education.

Their belief in parental responsibility for the education of their children was demonstrated by their continual involvement in monitoring public school education. “Some of the [regular] classroom teaching did not fit with our religious beliefs We were watching closely” (Lois).

When Chloe was in 4th grade, Brian and Lois became convicted that parental responsibility included home education. For two years, they allowed Chloe to choose her educational setting; Chloe chose home

education. At this point, they were further convicted that the responsibility for that choice lay with them. Chloe happily remained at home.

Perceptions

Relationships.

Responses from all three Longs attested to strong familial bonds. They shared mutual respect and common beliefs. During Chloe's teen years, the level of trust between Chloe and her father floundered even though she continued to feel that he demonstrated a very high degree of warmth toward her. As for her sibling, Chloe said, "My sister was more cute, more useful, more secure, more calm . . . the easier child. We were equally respected, but I was definitely the sillier child. She went to a conservative Christian school and I went to Manhattan to a conservatory." All three Longs agreed that Chloe had a strong sense of security and belonging. Chloe felt that her sense of acceptance, outside her family, however, was based on her ability to make people laugh.

Chloe regarded her parents as "moral role models," saying, "My parents have very high standards about how they live their lives, and they expect the same from [me] . . . I always feel that I don't live up to my parent's expectations for my character. I'm always working hard and now it's more of a personal thing."

Chloe was very close with each of her grandparents and interacted well with older children, adults, musicians, and strangers. She had several distinct groups of friends from church, music camp, orchestra,

neighborhood, and home education groups. Chloe reflected, "I enjoy social interaction, but I have to be careful because I am very distracted by it as well. I think that if I had gone to [a traditional] high school, I would have been too focused on my friends and I wouldn't have learned anything at all." Both parents expressed some difficulty for Chloe in her relationships with chronological peers and younger children. Lois believed that Chloe was "kind of threatening to other kids."

Parenting practice with respect to socialization.

Chloe's main contacts beyond the nuclear family were with her grandparents (especially one day a week with her grandmother), people at church, and other musicians. Her parents provided transportation and were present for her numerous music lessons and rehearsals. She attended a residential music camp several weeks every summer beginning at age 12. Although there was some concern on the part of her parents over the residential aspect of the camps, in retrospect, both Lois and Chloe believed that "what she had to deal with at summer camp prepared her to handle New York City She probably would not have made it without the summer camp experience" (Lois).

Parenting practice with respect to education.

Brian was "somewhat anxious" at the beginning of home education after "[weighing] the risk of sacrificing expertise in certain areas against other [issues]."

Lois began with "What have I done?" and progressed to set a course from direct instruction to a role as facilitator as she helped Chloe develop into a self-learner. Lois recalled that the greatest demand on her time and energy was "keeping Chloe on track."

Adversity and transition.

The two periods of adversity in Chloe's life each stimulated a time of transition that in turn brought about positive change.

Adversity first occurred in her 4th grade classroom in the form of interpersonal conflict and social ostracism. It became so intense that Chloe chose not to remain in the class, and instead, transitioned smoothly to home education with the strong support of both parents.

Adversity occurred a second time during her sophomore year at Juilliard while she was experiencing much success. Chloe recalled, "I had a kind of breakdown as far as I don't know if I was ready to be successful [It was] a very changing time in my life where I decided to . . . redefine myself . . . not by being talented . . . but just being who I was, and knowing who God saw me as."

Passions

Brian expressed a passionate interest in Bible study as a means of strengthening "his relationship with Christ." Lois was also passionate about applying "God's Word to her life." Chloe identified music as a "great passion of mine. So much so that I sometimes forgot that it is with me

constantly I sometimes think that if you don't have a sound track on in the back of your life, then it is losing a lot of meaning. It is such a powerful way to affect the way you feel about a situation." She also indicated past "obsessions" with certain historical figures and periods.

Pathways

She described her parents as "more concerned about the way they live their lives than about what they achieve." Chloe admitted to "putting a lot of pressure" on herself. "I was always reading. I always felt I could be doing more, and becoming a more knowledgeable person. There was always something in the world I could be missing. I was independently driven." She is now trying to create a "balance in her life" (Lois). "Now I see the bigger picture . . . and I have an aesthetic eye, so I wouldn't have to necessarily be a musician" (Chloe).

She views her present vocational pathway as a symphony member as her calling, although she is open to future change, especially that of being a wife and homeschooling mother. Her parents agree with Chloe as to her present pathway and its fit with her passions and ability and the likelihood of future change especially with the addition of marriage and a family.

Congruence among the Long Family Triad

The Long triad data presented in Chapter Four would seem to reveal a very high degree of harmony in such areas as Chloe's characteristics (see Table 1), use of role-play, parenting style of each parent, and moderate level of educational challenge during her home education experience.

The Long triad continued to appear to display strong congruence in the emergent themes identified in this chapter (see Figure 3). They share a common personal Christian faith, a common philosophy and practice of socialization and education, reciprocal relationships, and similar perceptions of Chloe's transitions and adversities, passions, and pathway.

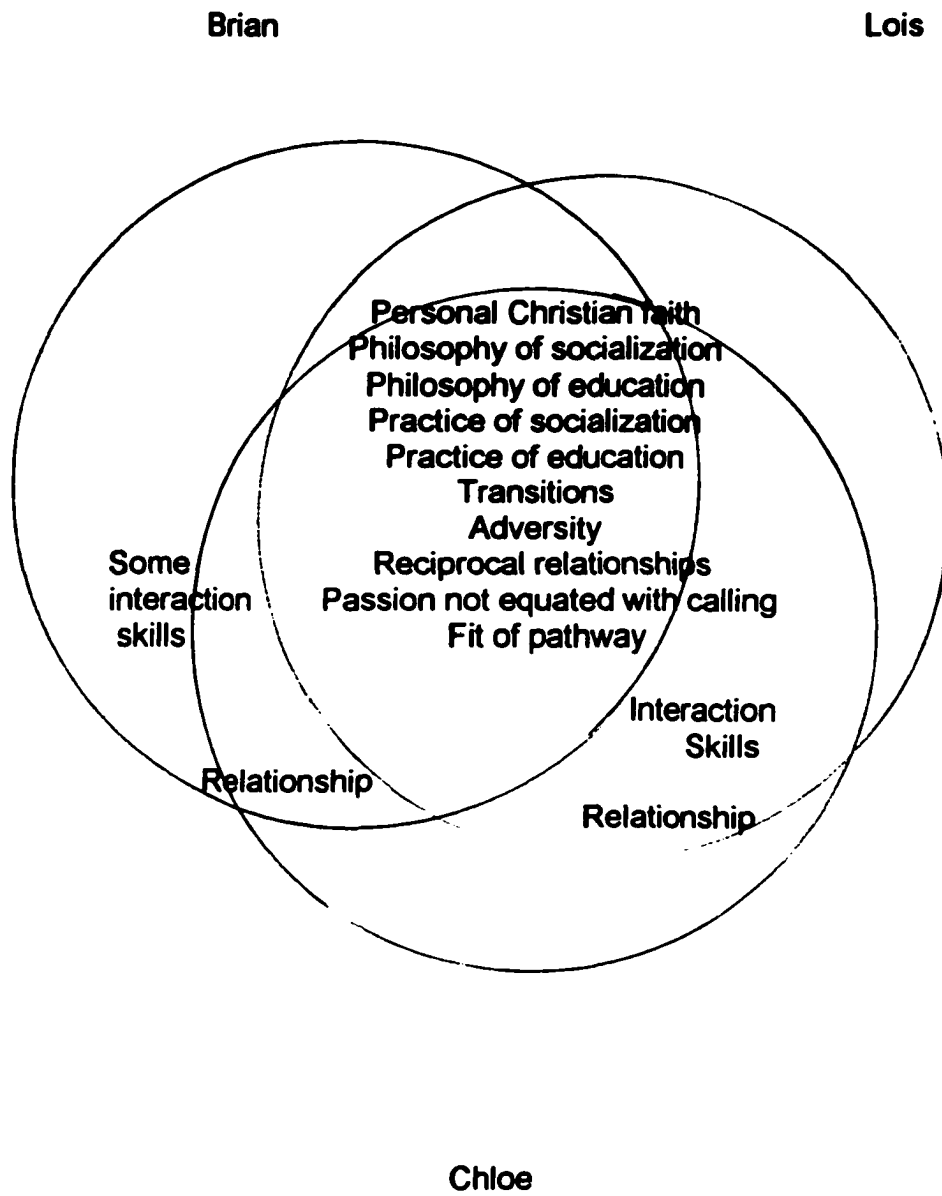


Figure 3. Congruence of the Long triad.

Emerging Themes found in the Mason Triad

Parents

Personal faith.

Each of the Mason triad referred to a personal Christian faith and its central force in his own life. Josh explained, "Our job is to raise children in the nurture and admonition of the Lord." Abby spoke of scriptural guidelines for mothers, saying, "Mothering is central to everything My place is to be with my children and to love my children and to teach them." Simon said, "I came to the realization . . . that whatever God has in store for me is so much better than [I] can imagine . . . so if [I] just free [myself] up to follow Him . . . then God says, 'All things work together for good for those who love Him and are called according to His purposes' (Romans 8:28)."

Parenting philosophy with respect to socialization.

Josh and Abby agreed during premarital training that she would be at home with any children full time. They also believed that their children should be isolated from non-familial children for the most part in order for their children to receive the bulk of their socialization influence within the nuclear and extended family.

Parenting philosophy with respect to education.

Josh and Abby agreed during premarital training that they would exclusively home educate the children that God gave them. Abby and Josh attempted to create "an educational environment" in their home with

"lots of tapes, art supplies, books, models, building supplies, and creative outlets for them to do projects." Abby thought of herself as a resource person.

Perceptions

Relationships.

All three Masons attested to a strong, positive family bond with a very high degree of mutual respect, trust, demonstrated warmth, shared beliefs, and the freedom to express feelings. Simon reported that "we never felt distance." Josh said, "It's really special when they go from being a child to [being] a friend."

Simon, with one older sister and six younger siblings, is the eldest male and, as such, assumed a leadership role in the family. He has a strong sense of belonging, of security, of acceptance, of usefulness, of responsibility, and of efficacy.

Parental practice with respect to socialization.

Josh and Abby continually sought opportunities to be deeply involved in the lives of their children. The children were intentionally very isolated from non-familial peers and sheltered from harmful influences; however, they were exposed to rich resources and educational materials. Abby was basically with the children constantly when they were young. Simon and his siblings did participate in field trips and outings sponsored by the local home education association. Josh took Simon to a

Toastmasters group for two years where Simon improved his public speaking ability.

They did not have a television but did have a monitor on which to view selected videotapes. Simon and his siblings engaged in extensive role-play and both family and personal reading, but were not exposed to fantasy until their teen years.

Each of the Masons agreed that Simon has excellent interaction skills with all ages. Interacting extensively with his grandparents, he has a very close relationship with each of them.

Parental practice with respect to education.

As Simon learned and matured, Abby and Josh moved along a continuum from direct instruction toward the goal of developing Simon as a self-learner with the parents functioning as facilitators. Simon's education was highly individualized, matching the level of instruction in each area to his ability; there was little use of actual textbooks as Simon preferred to study topics in-depth with much reading, discussion, and thinking.

Adversity and transition.

None of the Masons could recall any adversity in Simon's life. Abby did mention, though, Simon's frustration with not being able to read until the age of 10. However, Simon experienced no shame or threat to his self-concept or self-esteem due to his delayed reading ability.

None of the Masons could recall any difficult periods of transition for Simon. Josh explained, "Abby and I try to help [our children] through any changes. I think that due to lack of peer pressure or maybe the lack of fear of failure, his adolescence was a real joy."

Simon credited his smooth transition from home education to college to beginning at a community college while still doing high school level work at home, having good study skills, and to the fact that most of the students were working individuals. Now at a university, he stays with an uncle and returns home for the weekend.

Passions

Abby's primary passion is "to continue raising godly children who will serve the Lord in their lifework." Josh's passion is "to serve the Lord with [his] whole being." Simon feels called by God to continue his education explaining, "I really have a fascination with learning. Especially the abstract concepts we have to learn. Always in class, I get a shiver up my back when I think about [new abstract concepts]."

Pathway

All three Masons agree that Simon's current direction is an excellent fit with his passions and abilities and are content with his pathway. None thinks his direction will change dramatically, although Simon allowed that computers may play a greater role.

Simon expressed a desire to practice home education in the future with his own children in order to pass on the advantages he has received.

Congruence among the Mason Triad

The Mason triad data presented in Chapter Four would seem to indicate an exceptionally high degree of congruence with agreement in such areas as Simon's characteristics (see Table 1), leadership role, use of role-play, and degree of motivation and academic challenge.

The Mason triad continued to display a seemingly strong congruence with respect to the emergent theme identified in this chapter (see Figure 4). They share a common personal Christian faith, a common philosophy and practice of socialization and of education, reciprocal relationships, and similar perceptions of Simon's interaction skills, transitions, absence of adversity, and pathway.

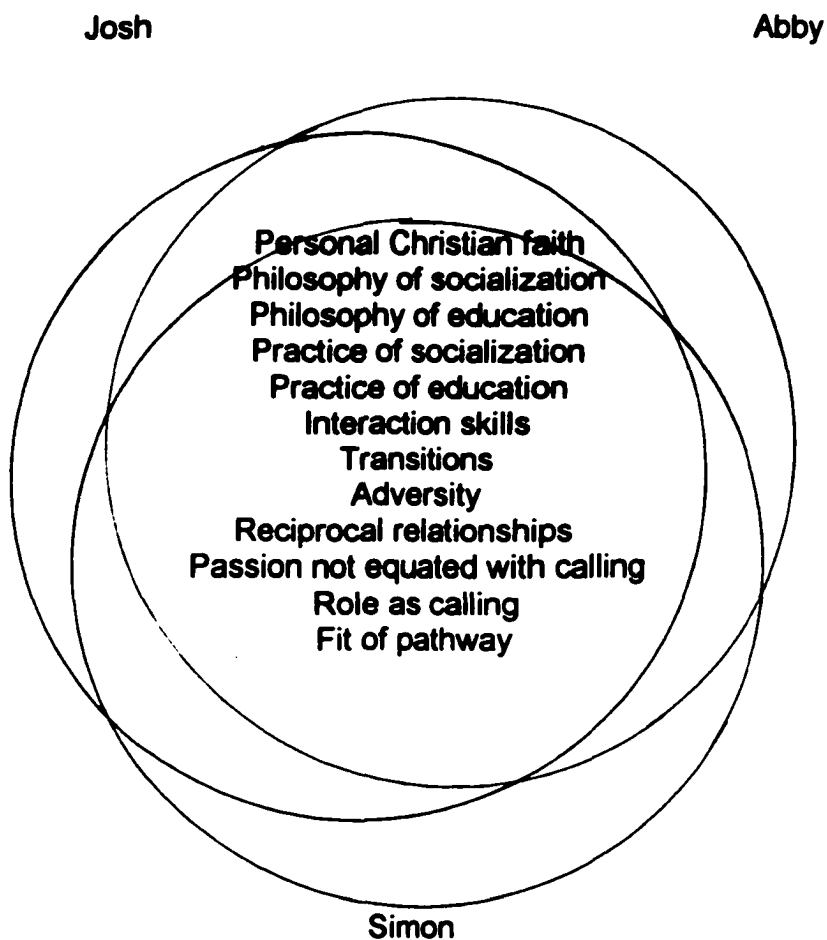


Figure 4. Congruence of the Mason triad.

Potential Patterns: Summary of Findings from Cross-Case Analyses

This summary of findings resulting from cross-case analyses of paired cases, sources of data (the individual, the mother, or the father), and methods of data collection (questionnaire and interview) reflects further categorization of the emerging themes presented earlier in this chapter. As these potential patterns are identified from the data, relevant links with the literature are indicated. After a brief introduction to the families, the identification of potential patterns are presented in the following order: (a) characteristics and passions of the individual, (b) characteristics and passions of the parents, (c) connectedness, (d) educational praxis, (e) perceptions of adversity and transitions, (f) perceptions of traditional and home education experience, and (g) pathways.

Compilation of Introductory Data of the Families

Each of the eight parents and their four children is Caucasian. Each of the four couples has been married to the same partner for over 20 years. Three of the couples have a yearly income of more than \$50,000; one couple has an income of less than \$25,000 per year. Two of the couples have more than 7 children; the other couples each have less than 4 children. Two of the children in this study are first-born; a third is the first-born male, which in his family is regarded as a first-born. Each of the fathers has a college degree with three of them holding a masters degree or higher in mathematics. All of the fathers have had at least training as a

teacher; three of them either have taught or are presently teaching. All of the mothers have had some college experience; none has any degree or teacher training. Conflicting results have been reported with respect to parent education level and student achievement. Havens (1994) and Rudner (1999) reported no significant relationship. However, Medlin (1994) found that aptitude and achievement scores were positively related to parent education level and teacher certification level of the mother. For seven of the parents, their aspirations before marriage have at least partially been fulfilled. Their most frequently mentioned current aspirations included a desire to serve the Lord (5), a desire to continue to raise children (5), a desire to help others (3), and a desire to obtain a college degree (2).

Seven of the 16 grandparents of the four individuals had earned at least a baccalaureate degree; one had not finished grammar school. Thirteen of the grandparents had highly valued education. Fifteen of them were alive during the home education period. Eleven were supportive of home education; two expressed no opinion to the family. Contact was frequent with 11 of the grandparents. Of the remaining four grandparents who resided out-of-state, two were estranged from the individual and her family.

Characteristics and Passions of the Individuals

The four participants in this study ranged in age from 19 to 28 years old; three of them were female. The younger two, ages 19 and 22, were

single while the older two females were married. Serena and Simon were raised in suburban neighborhoods; Esther and Chloe lived at least 5 years in a country setting. Esther and Simon were completely home educated, having never attended a traditional school. Both of the other participants spent the early years of their educational training in traditional schools, Chloe attended a public school system until the latter part of the 4th grade while Serena attended a private Christian school through 3rd grade.

Personal Christian faith.

A characteristic not identified as a characteristic of intellectually gifted but volunteered independently by Serena, Chloe, and Simon was that of a personal Christian faith. Simon asserted, "I came to the realization that whatever God had in store for me was so much better than [I] could imagine" while both Chloe and Serena referred to contentment wherever the Lord leads. Upon inquiry, Esther also acknowledged a personal Christian faith. Zern (1987b) indicated that "religious involvement seemed to provide the motivation and/or structure necessary to maximize accomplishments given one's inherent abilities" (p. 894).

Characteristics of the individuals.

The individuals, using a Likert scale (see Table 1), rated themselves on a list of common characteristics of intellectually gifted individuals. Each of the parents also rated his child on an identical list. All 12 participants indicated either a high or very high level of both commitment and persistence in the lives of the individuals, characteristics

Table 1

Characteristics of Individuals

Characteristic	Brown			Davidson			Long			Mason		
	I	M	F	I	F	M	I	F	M	I	F	M
Commitment	4	5	4	5	5	5	4	4	5	4	5	4
Ego-strength	3	4	4	4	3	3	4	4	4	4	4	4
Insight	3	4	3	5	5	4	4	5	5	3	4	3
Persistence	5	5	4	5	5	5	5	4	5	5	5	4
Curiosity	4	4	3	4	4	4	4	5	4	4	4	3
Intensity	5	4	3	4	5	5	5	5	5	5	4	3
Self-discipline	5	5	4	5	5	5	4	3	4	5	5	4
Capacity to												
work alone	5	5	4	5	5	5	5	3	4	5	5	4
Motivation	3	5	4	5	5	4	4	3	4	3	5	4
Driving desire	3	5	3	4	5	4	5	5	5	3	5	3
Faith	y	-	-	y	-	-	y	-	-	y	-	-

Note. I = individual; M = mother's rating of individual; F = father's rating of individual. Scale: 1 = very low; 5 = very high. a Answers denote yes (y); no (n); or not applicable (-).

which are in some form generally included as characteristics of eminent individuals (Bloom & Sosniak, 1981; Cox, 1926; Feldman, 1985; Goertzel & Goertzel, 1962; Roe, 1953). Additionally, the individuals ranked themselves either high or very high with respect to the characteristics of intensity, self-discipline, and the capacity to work alone. At least six of

their parents rated them similarly with respect to these characteristics. The only characteristics on which one of the individuals (Simon) rated himself as either average or below average were ego-strength, insight, motivation, and a deriving desire. The lowest rating by any parent indicated at least a moderate presence of the particular characteristic in the life of the individual.

Passions.

In addition to continuing as avid readers, another characteristic included in the eminence literature, each of the individuals experienced prolonged periods of special interest. For each of these individuals, an interest developed in their primary years remains a passion today. Bloom and Sosniak (1981) found that passion for a field was often demonstrated by age 12. The intensity of the passion for Chloe ("Music is a great passion of mine. So much so that I sometimes forget that it is with me constantly") and Simon ("I really have a fascination with learning – especially the abstract concepts . . . I get a shiver up my back when I think about that") appears much stronger than does that of Esther ("I have always enjoyed music and teaching children") and Serena ("I love literature").

Characteristics and Passions of the Parents

Personal Christian faith.

As indicated through within-case analyses, six of the eight parents independently volunteered testimony as to the significance of a personal Christian faith in their lives. The Browns, while not referring to their faith or its impact, were active members of an evangelical Christian church. For two couples, the Davidsons and the Masons, their faith directly influenced their philosophy of socialization and education and, in turn, their role development and their expectations for their children. Personal faith also directly impacted the home education decision for the Longs and the Masons and, to a lesser extent, for the Davidsons.

Characteristics of the parents.

As a means of comparing parental characteristics and characteristics of their children, each of the parents also completed a Likert scale of characteristics indicative of gifted individuals with respect to themselves (see Table 2). The characteristic rated at either a high or a very high level by all eight parents was the capacity to work alone. All four fathers also rated themselves as having a very high level of commitment and insight; the mothers, with the exception of Lois, rated themselves similarly with respect to commitment. Three of the mothers (Abby, Karen, and Bev) and three of the fathers (Curt, Josh, and Brian) also rated themselves as having a high or very high level of persistence and

Table 2

Characteristics of Parents

Characteristics	Brown		Davidson		Long		Mason	
	M	F	M	F	M	F	M	F
Commitment	5	4	5	4	3	5	5	5
Ego-strength	2	4	2	4	2	3	4	4
Insight	3	4	4	4	4	4	4	4
Persistence	4	4	4	3	2	5	5	4
Curiosity	4	5	4	3	4	4	3	4
Intensity	3	3	4	3	4	5	4	4
Self-discipline	3	3	4	3	2	5	3	3
Capacity to work alone	5	4	4	5	4	5	5	5
Motivation	4	3	5	4	3	4	4	4
Driving desire	3	2	3	3	3	4	4	4
Faith	y	y	y	y	y	y	y	y

Note. M = mother's self-rating; F = father's self-rating. Scale: 1 = very low; 5 = very high. a Answers denote yes (y); no (n).

motivation. Three of the mothers rated themselves similarly with respect to intensity (not Lois) and curiosity (not Abby).

These parental ratings very closely mirrored the ratings of all four individuals, with respect to capacity to work alone, commitment, persistence, curiosity, and intensity. However, while three of the fathers

and three of the individuals rated ego-strength at a high level, only one of the mothers indicated a similar level of ego-strength. This may, in part, be due to current societal values with respect to child rearing as a vocation. Similarly, while all four individuals and two of the fathers rated their level of self-discipline as high or very high, three of the mothers indicated only a low or moderate presence of this characteristic.

Passions.

The parents in this study comprise a multi-talented group. Seven of the parents listed more than 5 skills, knowledge areas, and interests that may be reflective of their continued intellectual and creative pursuits. They are also a group with passions. Five of the parents listed at least two areas that they were passionate about; seven of them (including all four fathers) listed the study of the Bible as a passion. The Browns were the only couple who reported raising their daughter to vocationally follow her passion precisely because it was a passion.

Philosophy of the parents.

Each of the parents reflected what Albert (1991) described as non-random parenting. Their parenting attitudes and behaviors were driven by an underlying philosophy (Hoover-Dempsey & Sandler, 1995; Van Galen, 1986). For the Masons and the Davidsons, parenting philosophy appeared to be driven by their Christian faith; for the other two couples, their faith seemed to have a less direct effect. For the other two couples, their faith seemed to have a less direct effort. Perhaps due to the development of

their personal Christian faith after Chloe was born, the Longs' faith seemed to have impacted their beliefs and actions, but possibly competed with other sociological and educational issues. In Esther's case, although formulated from Christian beliefs, the Browns' philosophy may have been impacted more by a desire to withdraw from society. This impact of Christian faith on parenting philosophy, especially with respect to motivation for home education, was indicated by both Havens (1994) and Johnson (1991).

Parenting philosophy with respect to socialization.

Each couple had made a purposeful decision for the wife to remain at home in order to raise their children. This commitment may be reflective of Bronfenbrenner's (1970) emphasis on the importance of the continual dedication of a single individual to the child during early childhood (1978). Both the Browns and the Masons sought to intentionally isolate their children from non-familial peers in order that the primary socialization influence on their children would be the family itself. The Davidsons and the Longs, although their children attended traditional primary schools, were also intentional, although to a lesser degree, with respect to socialization influences.

In the literature, McCurdy (1960) and Roe (1953) found in the literature evidence of isolation from non-familial peers with McCurdy reporting a likelihood of children developing companionships with either a sibling or a parent. Several researchers indicated socialization in groups of

chronological peers carried with it potential dangers (Bronfenbrenner, 1970; Coleman & Hoffer 1987).

Parenting philosophy with respect to education.

Each of the parents demonstrated their belief in parental responsibility for the education of their children. The Browns and the Masons assumed full responsibility; during the early years of their children's education, both the Davidsons and the Longs delegated a measure of this responsibility to traditional schools. The Browns, who described learning as "just part of life," believed that the purpose of education was to develop independent thinking and the ability to critique society; the Davidsons and Masons believed that education was both academic and spiritual preparation for life; and the Longs regarded education as talent development (Bloom & Sosniak, 1981).

Connectedness

Relationship with parents.

Connectedness, as reflected by the perception of the relationship between the individual and each of his parents during the period of home education, emerged as a potential pattern. On a Likert scale (see Table 3), each of the individuals rated his overall relationship with his mother during the period of home education as positive (Serena) or very positive. Additionally, each of the individuals rated his beliefs as either similar (Esther) or very similar to those of his mother. Chloe and Simon indicated a freedom to express their feelings to their mother that was very strong;

Serena indicated a strong freedom, whereas Esther indicated only a moderate freedom to express her feelings to her mother. The mother of each individual was cited as either the only role model for that individual (Esther) or as one of their role models. These findings are consistent with Bloom's (1985) report of a very close bond, usually with the mother, that continued to develop during the period of talent development.

Table 3
Relationship of Individual with Parent

Central Relationship	Brown		Davidson		Long		Mason	
	Im	If	Im	If	Im	If	Im	If
PAST								
Overall								
Relationship	5	2	4	5	5	3	5	5
Express feelings	3	1	4	5	5	3	5	5
Similar beliefs	4	2	5	5	5	5	5	5
PRESENT								
Overall								
Relationship	5	3	5	5	5	5	5	5
Express feelings	4	1	5	5	5	5	5	5
Similar beliefs	4	2	5	5	4	5	5	5

Note. Im = individual's rating with respect to mother; If = individual's rating with respect to father.

For Serena and Simon, their overall relationship with their father during the period of home education was rated as very positive. However, Chloe reported only a moderate relationship while Esther indicated a negative relationship with her father. Each rated his belief system as very similar to that of his father except Esther who reported a very dissimilar belief system than that of her father. Serena and Simon again indicated a very strong freedom to express their feelings to their fathers; Chloe indicated a moderate freedom, whereas Esther related a strong lack of freedom to express her feelings to her father. Chloe and Simon cited their fathers as one of their primary role models.

During the period of home education, then, each of the individuals appears to have had a positive relationship with his mother. However, only Serena and Simon had a distinctly positive relationship with their fathers. While Chloe's relationship appeared to be more moderate, she did strongly agree with her father's belief system. Only Esther appeared to have had a negative relationship with her father. In a study of architects, MacKinnon (1962) found that lack of intense closeness, especially with the father had a somewhat positive effect.

With respect to their present relationships with their parents, Simon's remains strongly positive in all three areas with both parents. Serena reported a positive change in her relationship with her mother, making her relationship with both parents now strongly positive. Esther reported positive growth in her relationship with both her mother, in the

freedom to express her feelings, and her father, with respect to their overall relationship which she now described as moderate. Chloe alone reported a decrease in the strength of any factor as she rated the present similarity of her belief system with that of her mother as now merely positive. However, Chloe indicated the greatest increase in any relational factor as she reported a movement from moderate to very positive with respect to freedom to express her feelings to and her overall relationship with her father.

Sense of self.

All four individuals reported a sense of usefulness, responsibility, and at least in their field, a sense of efficacy. Chloe, Serena, and Simon reported a strong sense of security, belonging, and acceptance during their home education years with only one exception. While Chloe felt accepted by her parents and extended family, she felt as if she needed to entertain in order to be assured of acceptance from those outside the family. Esther reported insecurity during her years on the farm and a lack of acceptance from her father; her father posited that perhaps Esther's sense of belonging was more a sense of being trapped. The importance of the development of a strong sense of self to positive academic and social growth was highlighted by Bronfenbrenner (1970), Clark (1983), L. Coleman (1995), and Coleman and Hoffer (1987). Leroux and Bell (1998) found that "homeschooling [may] . . . build a stronger self-concept" (p.6).

Socialization praxis.

Although only the Browns and the Masons were especially intentional about the isolation of their children from non-familial peers, several commonalities surfaced among the individuals and their families (see Table 4). All eight parents reported actively seeking opportunities for involvement in the lives of their children. The Browns, Davidsons, and the Masons carefully regulated and monitored the social interaction of their children. Chloe's parents appeared to monitor her interaction outside of the family but to a lesser degree. This mirrored Tillman's (1995) finding that families involved in home education not only seek primary socialization within the family context but also actively seek enriching opportunities in the community. Bronfenbrenner (1970) maintained that a child "moves out as he matures into increasingly larger social contexts" (p.2).

Chloe was also the only individual to watch television albeit minimally. Rudner (1999) reported that academic achievement varied inversely with the amount of television viewing. Each of the families either regularly read aloud together or at least fostered extensive reading in the lives of the four individuals. Each of the individuals engaged in extensive role-play or fantasy, a factor also recorded by McCurdy (1960).

Simon, Serena, and Chloe experienced excellent relationships with each of their grandparents although Serena's maternal grandparents lived

Table 4

Socialization Practices

Socialization				
Practice	Esther	Serena	Chloe	Simon
Role in family	organizer	organizer	entertainer star	leader
Isolation from non-familial peers	y	n	y	y
Monitored interaction	-	y	y	y
Close relationship with grandparents	y/n	y/y	y/y	y/y
Multigenerational interaction skills	very good	very good	very good	very good
Role models grandparents	mother	older girls	parents / music teachers	parents
Television viewing	n	n	y	y
Fantasy / role play	y	y	y	y

Note. Y = yes; N = no. with respect to grandparents, first response denotes relationship with maternal grandparents; second response denotes relationship with paternal grandparents. ^a Father reported only interaction skills with chronological peers. ^b Members of home education support group and church group.

in a different state. Esther interacted positively with her maternal grandparents; however, her family had only slight contact with her paternal grandparents. Several researchers indicated a transgenerational influence

and transmission of values (Albert, 1991; Clark, 1983; Feldman & Goldsmith, 1986; Marjoribanks, 1994).

All four individuals were reported by their parents to have either good or very good multigenerational interaction skills with one exception. While indicating either good or very good interaction skills with all other groups, Chloe's father indicated only a moderate level of interaction skills with chronological peers. Chloe's yearly summer music camp experience helped prepare her for interaction with those from backgrounds differing from hers. Coleman and Hoffer (1987) emphasized the importance of embeddedness or the "ensconcing of youth in enclaves of adults most proximate to them, first and most prominently the family and second, a surrounding community of other adults" (p.229) that allows youth to experience the benefit of adult social capital. Bronfenbrenner (1970) warned parents against a failure to use peer group influence constructively in developing a sense of responsibility and consideration for others.

When asked to indicate the particular role the individual played in the family, both Esther and Serena were identified as organizers. A leadership role was indicated for Simon, while Chloe believed her role evolved from that of entertainer to that of star.

*Educational praxis**Effective teacher traits.*

Using a Likert scale (see Table 5), both parents and their children rated the parents with respect to traits commonly found in effective teachers of intellectually gifted individuals (Borland, 1989). The individuals rated their parents more highly overall than the parents rated themselves. With the exception of two average ratings for the mothers and two average ratings for the fathers, Serena, Chloe, and Simon rated their parents either high or very high with respect to the following traits: a high level of intelligence, emotional maturity, flexibility, relational ability, counseling skill, continual intellectual or creative pursuits, sense of humor, and coping skills. The exceptions for the mothers were emotional maturity and flexibility; for the fathers, the exceptions were flexibility and relational ability.

Although Esther rated her mother either high or very high in all areas, with the exception of a very high rating for high level of intelligence, she rated her father low in all other categories. Three of the fathers, with two high and one very high rating, considered themselves as possessing a high level of intelligence (Curt, Brian, and Josh) while only two of the mothers rated themselves highly (Lois and Abby). The only trait on which all eight parents rated themselves high or very high was continual intellectual and creative pursuits. Goertzel and Goertzel (1962) recorded a strong drive toward continual intellectual or creative pursuits in parents of

Table 5

Traits of Effective Teachers of the Intellectually Gifted

Trait	Brown				Davidson				Long				Mason			
	I	M	I	F	I	M	I	F	I	M	I	F	I	M	I	F
High level of intelligence	5	3	5	4	5	3	5	3	4	4	5	5	5	4	5	4
Emotional maturity	5	3	4	3	3	3	5	4	4	3	4	4	5	5	5	4
Flexibility	5	5	2	3	4	2	5	4	3	3	3	3	5	5	5	5
Relational ability	4	3	3	2	4	5	5	4	4	3	3	3	5	4	5	5
Counseling skills	4	3	3	3	4	5	5	5	5	3	4	3	5	4	5	5
Continual Intellectual/																
Creative pursuits	5	4	5	4	5	4	5	4	4	5	5	5	5	5	5	4
Sense of humor	4	4	4	4	5	5	5	5	4	2	4	4	5	4	5	4
Coping ability	5	5	2	2	4	3	5	4	4	3	4	4	5	5	5	5

Note. I = individual's rating of parent; M = mother's self-rating; F = father's self-rating. Scale: 1 = very low; 5 = very high

the individuals studied. Three of the mothers and three of the fathers considered themselves to have a very good sense of humor. Traits in which two or three mothers indicated only a moderate presence were a high level of intelligence, emotional maturity, relational ability, counseling skills, and coping skills. Two fathers indicated only a moderate presence of flexibility and counseling skills (Curt and Brian). The lowest ratings for the mothers were single low indications of flexibility (Bev), and a sense of

humor (Lois); the lowest ratings for the fathers were single low indicators of relational ability and coping skills (Curt).

Teaching role.

The teaching responsibilities fell mainly to the mothers, with the fathers serving at least in an advisory capacity in his areas of strength, although the Browns tended to share the teaching responsibilities fairly evenly. For the most part, the parents employed modeling often; only Curt and George reported moderate use of modeling. While the individuals were developing their study skills, direct instruction was used to a great degree by all of the parents except Lois who reported moderate use. Some form of reinforcement was used, at least moderately, by each of the parents except Lois and Abby.

Each of the mothers had a teaching role that evolved over time from that of instructor to that of facilitator or resource person (see Table 6). Mowder (1991a) also reported finding a change in parental role over time. Bloom (1985) reported that "at least one parent intensely devoted time and resources in an effort to provide optimal conditions for the development of the child's talent" (p.46). Feuerstein (1990) found that the mother's role as mediator had the greatest importance for highly gifted individuals. Eccles and Harrold (1993) and Coleman and Hoffer (1987) maintained that the actual involvement of the parent in the educational process of the child was one of the most important predictors of a child's achievement, motivation, and self-perception.

Individualization of education.

Individualization of the curriculum is a key component of effective gifted education (VanTassel-Baska, 1998) and as such, becomes a tempering variable of parental involvement (Hoover-Dempsey & Sandler, 1995). All four mothers, two of them to a major extent, individualized the education of their children (see Table 6). Curt was also actively involved in individualization of Esther's education in the early years of her home education. Abby and Karen did not utilize any packaged curriculums and few actual textbooks other than for math instruction. Simon, in particular, did not use a standard science curriculum but rather read and discussed selected adult science books. Chloe followed a similar pattern with respect to history. Bev continually evaluated available curriculums, making changes as she believed it to be prudent for Serena's learning.

Each of the mothers encouraged extensive reading with careful monitoring of perceived suitability, especially when the individuals were younger, and extensive exploration of areas of interest. Both of these practices were reported in the literature by Feldman (1985), McCurdy (1960), and Walberg (1975). Lois was the only mother who chose to keep Chloe relatively on grade level in several subjects, as her music education was quite time consuming. While the Longs agreed that Chloe was only moderately challenged in the more conventional areas of her home education experience, she was highly challenged by her development as a

Table 6

Educational Practices

Educational practice	Esther	Serena	Chloe	Simon
Formal identification as gifted	n	n	y	y
Parent identification as gifted	y	y	y	y
Individualization of curriculum	y	increased over time	certain subject areas	y
Above-grade-level instruction	y	mastery learning	n	y
Evolving curriculum	y	y	certain subject areas	y
Testing	n	y	y	periodic
Teaching role (mother)	DI > F	DI > F	DI > F	DI > F
Avid reader	y	y	y	y
Self-learner	y	y	y	y
Schedule Hours/days/weeks	4/4-5/varied	8/5/36	4-5/5/40	4/4/32-35
Grade levels covered during home education	K-12	4-12	4.6-12	K-12

Note. DI > F denotes progression of role over time from direct instruction to facilitation.

musician. This reflects a similar pattern reported by Bloom and Sosniak (1981) and Feldman (1985). Karen and Bev employed content mastery learning to indicate advancement. The curriculum, for Simon and Esther, and to a great extent Serena, was a highly evolving one that has been

described as a key component of gifted education curriculum by VanTassel-Baska (1998). Public recognition of skills and activities, identified as a reinforcer by Bloom (1985), occurred over time for Chloe and, to a lesser extent, for Simon and Esther.

Each of the individuals followed a traditional school pattern to some extent. All of the individuals studied at least 4 hours per day 4 to 5 days each week for approximately 32 to 36 weeks per year. Serena studied about 8 hours each day. Medlin (1994) reported that in home education settings, achievement may possibly be enhanced by a less structured approach.

Adversity and Transition

“The right context for the nurturance process appears to be as critical at this time [early childhood through early adolescence] as are key individuals” (VanTassel-Baska, 1989, p.157). Albert (1991) asserted that “the family lays the groundwork, sets the emotional and cognitive tenor for development, determines major themes and talents, and directs the child toward the future” (p.77).

Adversity.

Although Bloom (1985) and others have indicated the presence of a cohesive home in the early family life of eminent individuals, other researchers reported an atmosphere of tension (Roe, 1953) or a high

incidence of adversity (Goertzel & Goertzel, 1962). More recently, though, Allie-Carson (1990) reported a "dynamic equilibrium between stability and change . . . suggesting the presence of stabilizing forces within the home school family systems" (p.17) due possibly in part to family consensus regarding its structure and function.

Discovering both types of homes, Albert (1991) described the developmental impact of an incongruous, or tension-filled home, as one that put the child at a high degree of risk if the child was unable to move beyond the turmoil. An aid to dealing constructively with the adversity was supportive focal relationships outside the family. However, Albert noted that compliant children in such a turbulent family context were highly receptive to crystallizing experiences. Esther reported having experienced no focal relationships and may possibly consider her early identification with piano as a crystallizing experience.

A congruous home, one marked by balance in a secure environment, may allow for smooth developmental progression due to developmentally appropriate individualization of educational and social inputs and a sense of belonging, setting the stage for a crystallizing experience. Both Simon and Chloe, in their early strong identification with a particular field, seemed to have had crystallizing experiences.

At least two periods of adversity were identified by each of the female individuals; Serena experienced an additional period of adversity. Each period of adversity for these three individuals was confirmed by at

least one parent. Chloe and Serena experienced adversity prior to adolescence; Esther and Serena experienced adversity at the beginning of adolescence; and all three experienced a period of adversity after the completion of their home education. As for Simon, his delayed reading ability was recognized by his mother as a slight adversity, but was not considered to be an adversity by either Simon or his father, perhaps indicating, on Simon's part, an intact and positive self-concept and/or an adherence to delayed learning techniques on the part of his father. Ray (2000) reported the possibility of an ameliorative affect of home education on background variables, similar to adversity, that are more normally considered deleterious to academic achievement.

Transition.

Two periods of transition were identified by each of the four individuals; a third transition was described by Serena. Both parents also recognized all of these transitions. Similar to findings by Goertzel and Goertzel (1962), for Chloe and Serena, all the transition periods were movements out of adversity into positive change and growth. The Goertzels also indicated that the ability to deal with adversity was a prevalent finding in their study. For Esther, both of her transition periods were described as negative. However, one period was positively resolved. Chloe and Serena each experienced a period of transition before adolescence; all four experienced transition at the beginning of adolescence; and all four experienced a period of transition after the

completion of their home education. Esther, especially, had to deal with multiple transitions as seen in her move to the farm and heightened isolation experienced simultaneously with a developmental period of puberty. Eccles & Midgely (1989) refer to this phenomenon as stage-environment-match and indicated its potentially negative effect on educational outcome.

Perception of the Traditional Educational Experience

Both Serena and Chloe experienced traditional schooling until about the 4th grade. Both families had several similar perceptions about this period (see Table 7). They considered the quality of the teachers, the quality of the curriculum, and certain extra-curricular activities as strengths. Of the individual's particular traditional schooling experience, these two families considered certain negative socialization issues to be weaknesses. Both families identified the amount of time involved in either attending class or attending to perceived problems as costs to their families.

Table 7

Perceptions of Traditional Educational Experience

Participant	Strengths	Weaknesses	Costs
Serena	competent teachers resources	negative socialization extra-curricular activities	tuition
Bev	learned responsibility negative socialization	minimal student-teacher interaction	transportation
Greg	Christian curriculum	standardized lessons high student:teacher ratio	pressure on child
Chloe ^b	none	waste of time	none
Lois	fine teachers group activities	some objectionable curriculum	
Brian	reasonable start in the basics	humanist agenda social fiasco	wasted time no peace of mind

Note. ^a Serena attended a private Christian school K – 3, ^b Chloe attended public school K – 4.6.

Perception of the Home Education Experience

A child's perception of his environment is the key to the impact of that environment (Marjoribanks, 1994) and may also be the key to the understanding of an individual's response to early familial adversity (VanTassel-Baska, 1989). Accordingly, those perceptions reported by the individuals in the remaining sections may take on heightened importance.

Strengths.

All four of the individuals were educated at home for at least 8 years, including the middle school and high school levels. Each of the 12 participants completed an evaluative summary of the strengths and weaknesses and costs of the educational experience (see Table 8). All of the individuals, except Esther, regarded the positive effect on family relationships as a strength of their home education experience, as did all of the mothers except Esther's and two of the fathers (Brian and Josh). Esther, Serena, and Simon cited the freedom to pursue interests as a strength as did Karen and Curt (Esther's parents), Lois and Brian (Chloe's parents), and Josh and Abby (Simon's parents). A strong moral foundation was indicated as a strength by Serena and her father and Simon and his parents. The flexibility in scheduling was considered as a strength by Chloe and her parents, Karen (Esther's mother), and Simon. Serena and her parents identified the implementation of a good curriculum as a strength, as did Esther's mother (Karen), Chloe's father (Brian), and Simon's

Table 8
Perceptions of Home Education Experience

Participant	Strengths	Weaknesses	Costs
Esther	time to pursue interests	random learning	lost experience of childhood
	time for employment	no group skills	difficult transition to college
Karen	self-study skills	too structured at first	personal time
	literature	10 children	financial
Curt	freedom to learn	lack of direction	sense of isolation
	self-discipline	siblings	financial
Serena	self-study skills	no team sports	time/cost to mother
	strong family bonds	disruptions to schedule	
Bev	mastery learning	lack of SAT preparation	time/cost to mother
	close family relationships	lack of foreign language	
Greg	good curriculum	lack of SAT preparation	time/cost to mother
	consistent discipline	lack of foreign language	
Chloe	positive effect on family	procrastination	none
	specialization	lack of expertise in certain areas	
Lois	greater family influence	lack of self-discipline	anxiety as to
	as opposed to peers	lack of expertise	effectiveness "die to self"
Brian	strengthen family bonds	scheduling difficulties	some financial
	freedom to pursue interests	not well-rounded	athletic options

Participant	Strengths	Weaknesses	Costs
Simon	close family relationships foundation of absolute truth	lack of lab facilities	none
Abby	ability to think and learn strong knowledge base	none	mother on duty 24/7
Josh	strong moral foundation self-study skills	none	none

parents. Karen (Esther's mother) and Abby (Simon's mother) regarded the ability to individualize the curriculum as a strength of the home education experience; Bev (Serena's mother) identified the opportunity to employ mastery learning as a strength.

Weaknesses.

Chloe and her parents, Esther, Simon, and Serena's parents all identified the lack of expertise in certain areas such as science labs, foreign language, or research skills as a weakness of the home education experience. Esther, Serena, and Chloe's father regarded the absence of group activities or team sports as a weakness. Esther and her parents agreed that occasional lack of direction in the course of study was a weakness of their home education experience as was the fact that the number of siblings prohibited extended parental interaction with Esther. Chloe and her parents agreed that problems with procrastination surfaced

as a weakness for them. Identifying two weaknesses of her home education experience, Serena believed that disruptions in the general life of the family often became disruptions in learning and that poor performance of the child could be interpreted personally by the parent. Simon's parents listed no weaknesses in his home education experience.

Costs.

Neither Chloe, nor Simon, nor his father identified any costs of home education. All of the mothers identified the necessary time commitment and the necessity of foregoing personal pursuits as a cost. Additionally, Serena and her father listed Bev's commitment as a cost. Esther's parents, Chloe's father (Brian), and Simon's mother regarded financial expenditures as a cost. Although he disagreed with Esther, her father indicated that she viewed a lack of social opportunities as a cost of the home education experience. Esther and her father cited the difficult transition to college as a cost of the home education experience; Esther also viewed home education as a lost experience of childhood. The absence of a formal high school diploma was also listed as a cost by Esther. Lois (Chloe's mother) regarded her anxiety about doing an adequate job of educating her child as a cost of the home education experience.

Additional perceptions.

Three of the families indicated that the home education experience had been sufficiently challenging for the individual and that the individual

had used time constructively with the caveat by Chloe's parents about her scheduling difficulties. However, Esther and her parents believed that instruction had been too challenging at first and not challenging enough as the home education experience progressed; they responded negatively with regard to the constructive use of time.

Marjoribanks (1994) indicated that parental aspiration for the child became the threshold for the child's own particular educational aspirations. Chloe, Simon, and Serena did not feel pressured by their parents to achieve certain educational goals. However, Simon's mother did acknowledge that she and her husband had high standards for Simon; Greg reported that he encouraged Serena to get an advanced degree. Chloe indicated that she was independently driven and reported feeling as if she never quite met her parents' expectations for her with regard to her character. Esther indicated that she felt pressured by unspoken expectations of her father.

Pathway

Transition from home education to higher education.

Each of the individuals transitioned from home education to a higher education setting (see Table 9). For three of the individuals, this transition was a smooth one. Factors that facilitated this transition were identified by the individuals or their families. Serena spent a year in prayer seeking the Lord's direction for her future studies; Chloe and Simon began

Table 9

Pathway

Element of Pathway	Esther	Serena	Chloe	Simon
Age	28	25	22	19
Mother's educational level	now attending college	two years of college	two years of college	high school
Father's educational level	Ph.D.	masters	masters	B.S. Ed.
Concurrent education	no	no	yes	yes
Transition to college	difficult	smooth	smooth	smooth
Individual educational level	B.S./3.7 GPA	masters	B.S.	college junior B.S./M.S.
Scholarships/awards	Who's Who scholarship	Who's Who valedictorian	full scholarship	scholarship
Calling	music?	motherhood Nursing	music	science
Vocation	mother Music teacher	pediatric nurse practitioner	symphony musician	student and NASA intern
Fit with passion/abilities	yes	yes	yes	yes
Change likely	no	upon becoming a mother	upon becoming a mother; if injured	no
Contentment with pathway	yes	yes	yes	yes
Plan to home educate	no	yes,	yes	yes

Note. NSF denotes National Science Foundation

their undergraduate studies while still completing their high school level courses. Both Simon and Serena continued to live at home during their first two years working on their associate degrees. They also credited the older age of the students as beneficial to their smooth transition. Both Serena and Chloe had previously attended traditional schools and Simon had participated in some home education co-op classes. Chloe's summer music camp dormitory living experience helped to prepare her for life in Manhattan at the conservatory. Esther, the one individual who experienced a difficult transition to higher education, resided in the college dormitory and had had no previous classroom experience.

Each of the individuals received at least partial academic scholarships. Serena, as valedictorian, and Simon, magna cum laude, both graduated with associate degrees before going on to a university. Both Serena and Esther were listed in *Who's Who in American Colleges and Universities*.

Present pathways.

Three of the individuals are consciously following their passions; two of them have also identified their passion as their calling although they do not automatically equate passion with calling. At this juncture in their lives, Simon, who believes his calling is creating and electrical engineering, is in a joint program at a university pursuing both a bachelor's and a master's degree in engineering. He is also participating in a student program at

NASA and has been approached by his university as to possibly transitioning directly from his undergraduate work to a subsidized doctoral program. Chloe, who believes her calling is music, recently graduated from a prestigious music conservatory and is now playing with a major symphony. Esther, uncertain if music is her calling although she still regards it as her passion, earned a Bachelor's Degree in Music Performance and is presently teaching music and, along with her husband, is raising her two young daughters. Serena, who believes her primary future calling is to become a mother, considers nursing her secondary calling; she has earned a master's degree in a Pediatric Nurse Practitioner program, is employed in a private practice, and is married.

Each of the individuals, each of the mothers, and two of the fathers agreed that the individual's present vocation is a good fit with the individual's gifts and abilities. Greg allowed that Serena's vocation was a good fit with her gifts, but that he would prefer to see her in a different vocation. Curt saw music as only partially reflective of Esther's gifts.

Both Esther and her parents and Simon and his parents believed that a significant change in vocation would not be likely in the future. The other two families believed that the individuals in those families would be very likely to change vocations if and when they become mothers, although Chloe and her parents believed that she would continue to be involved in her passion area. Chloe's parents also acknowledged that an accident or physical affliction could force a change in vocational direction.

All of the individuals and their parents were content with the present vocational pathways of the individuals, although Chloe and her father expressed a desire to be geographically closer and her mother expressed some concern with regard to Chloe's spiritual development.

Both Simon and Chloe definitely intend to homeschool their children in order to pass on to their children advantages they have received. Serena is open to homeschooling her children if the Lord leads her and her husband to that decision; yet she is not philosophically opposed to traditional education. Esther definitely intends to send her children to public school.

Conclusion

From within-case analyses of the four cases described in Chapter Four, the emergent themes identified were faith (in three cases), parenting philosophy and praxis, relationships, adversity and transition, pathways, and congruence of perception. Potential patterns identified through cross-case analyses and supported by the literature were characteristics and passions of the intellectually gifted individuals, characteristics and passions of their parents, connectedness, educational praxis, adversity and transition, perception of educational experience, and pathway. Signifying a transition from the analytic nature of this chapter to a more conceptual nature, the final chapter of this study is comprised of unanticipated findings, issues, intersection of theories, conclusions, implications, and recommendations.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

Overview

In the final chapter of this study, a brief review of the preceding chapters is presented identifying the research problem as presented in Chapter One, the constructs as treated in the literature review in Chapter Two, the methodology as described in detail in Chapter Three, major findings as reported in Chapter Four, and analyses and relationship to previous research in Chapter Five. Following this review, the remainder of this chapter focuses on the discussion of results which includes (a) unanticipated findings, (b) issues, (c) intersection of theories, and (d) conclusion, (e) implications, and (f) recommendations.

Whether in response to particular needs of intellectually gifted learners, the critical importance of parental involvement to the educational outcomes of children, the erosion of the educational and socialization role of the family over the last century, or other precipitating conditions, it remains that the practice of home education continues to gain momentum. Experiencing an unparalleled resurgence over the past two decades, home education is no longer an "isolated activity of a marginal group of parents" (Van Galen & Pitman, 1991, p. 3) but rather a firmly established and growing educational movement at the start of a new century. Granting a low home education population estimate of 1 million children, even if intellectually gifted learners constituted a mere 2% of this population, as many as 20,000 intellectually gifted children may presently be involved in home education. The question of the propriety of this particular

educational alternative for intellectually gifted individuals is voiced by many and varied stakeholders. Traditional educators, home educators, and lay persons alike express concern regarding the impact of participation in home education on the development of intellectually gifted learners. As the pioneering families of home education in the 1980s have now yielded the first crop of high school level graduates, this study sought to explore the impact of the environmental catalysts of surroundings, persons, undertakings, and events inherent in home education on the talent development process of intellectually gifted individuals.

As the current literature in gifted education, general education, or home education contains little research that addresses this issue, it was necessary in Chapter Two to examine three separate strands of research in order to gain an informed perspective. Examination of existing research on the parental role in the development of eminence revealed the form and impact of parental involvement on the development of gifted individuals in the past. Examination of current general education and sociological research on parental involvement revealed the impact of parental involvement on children's educational and social development in the present. Examination of home education research revealed what is currently known about this specific form of parental involvement.

As an extensive examination of the developmental impact of social context within the bounded system of a particular case may result in an understanding of a broader phenomenon (Bogdan & Biklen, 1998), and as such qualitative study is particularly appropriate in the study of emerging fields (Eisenhardt, 1989),

exploratory case study research was selected as the optimal design for this study and was detailed in Chapter Three.

Participants were secured through recommendations from various sources and had to meet particular requirements. Data collection methods employed researcher-designed instruments and included a total of three separate questionnaires and two separate interview guides. Gagne's (1995) differential model of giftedness and talent provided the theoretical framework for the instruments employed with the four individuals; Hoover-Dempsey and Sandler's (1995) causal and specific model of parental involvement provided the theoretical framework for the instruments employed with each of their parents.

Chapter Four was comprised of information garnered from each individual and each of his parents through questionnaires and face-to-face interviews and was presented in a written report completed in the holistic style of qualitative work which begins with detailed, concrete, extensive description to inform the reader. Chapter Five was comprised of a summary of findings from within-case analyses and a summary of findings from cross-case analyses that included comparison with relevant literature (see Table 10).

Major findings reported in Chapter Five revealed that each set of parents had been married for more than 20 years. The fathers were seemingly well-educated including teacher training; the mothers were more moderately educated without formal teacher training. For the most part, they shared the characteristics of a high level of intelligence, commitment, continual pursuit of intellectual or

Table 10

Possible Facilitators and Inhibitors of Developmental Potential

Facilitator	Shaping factor	Inhibitor
common/strong	Christian faith	disparate/weak
common	philosophy	disparate
strong/positive	relationship with parents	weak/negative
intensive	amount of parental involvement	minimal
strong/positive	sense of self	weak/negative
relative isolate from age peers	socialization	intensive association with peers
mediated	intergenerational interaction	unmonitored
absent/monitored	TV/media	present/monitored
individualized with DAP	education	standard curriculum at age level
facilitation	role of teacher	direct instruction
specialization or rigor		
across curriculum	focus	generalization
positive growth	adversity	static
smooth	transition	difficult
sense of calling	call	uncertainty
good	fit	poor
contentment	pathway	lack of contentment
agreement	perception	disagreement

creative interests, and the capacity to work alone. All four fathers expressed a passion for studying the Bible as did three of the mothers.

All four of the intellectually gifted individuals indicated a high level of commitment, persistence, curiosity, intensity, self-discipline, and the capacity to work alone. All parents supported the existence of the first two characteristics in their child; at least six parents supported the existence of the remainder. At least three of the families had a good relationship with the individual's grandparents; each of the individuals interacted well with all age groups with one minor exception. All of the individuals reported a good sense of responsibility, sense of usefulness, and a sense of efficacy. Three of the individuals had a very strong sense of belonging, sense of security, and sense of acceptance by their parents. All four individuals had engaged in various forms of fantasy or role-play as children. Three of them had experienced some form of adversity; all had periods of transition.

Perceptions of the home education experience were relatively in agreement with the development of strong family bonds, the development of self-study skills, and the freedom to pursue areas of specialization being the most commonly mentioned strengths. Lack of expertise in certain areas, absence of group activities, problems with procrastination, and disruptions to the study schedule were each identified as a weakness of the home education experience. The requisite time commitment of the mother was considered the biggest cost of the home education experience by each of the mothers; necessary financial expenditures were also cited as a cost.

Three of the individuals had graduated from college; one had earned a master's degree; and one was currently working on an undergraduate degree. All of the individuals and, to a large degree, each of the parents believed that the present pathway was a good fit with the abilities of the individual; two of the fathers expressed some reservation as to the completeness of fit. All twelve of the participants expressed contentment with the present pathways.

Unanticipated Findings

L. Coleman (1995) recommended focusing on emic evidence, the individual's own voice, in order to more fully understand the nature and effects of specialized context on gifted and talented children. In this study, four concepts found particular voice as a result of interaction with the twelve participants.

Faith

Unbidden, reference to a Christian faith emerged in each of the families. A personal Christian faith was a significant factor in the construction of their parenting philosophy for two sets of parents. Faith had become a factor for a third couple during their child's primary education. For the fourth couple, faith had played a significant role in developing their parenting philosophy but had possibly become subsumed by an overriding drive for personal freedom and independence from society. Each of the individuals also expressed having personal Christian faith.

Such prevalence of faith may be due in part to recruitment of participants although no reference to the element of faith was either discussed or required. It may be related to a need for a relatively strong, carefully delineated parenting philosophy that could have been necessary for these pioneers of the home education movement to forsake traditional educational methods and instead, seek to raise children to become distinct from yet responsible contributors to society. It could also account for the seemingly "irrational commitment" (Bronfenbrenner, 1978) on the part of the mothers in delaying personal fulfillment in exchange for full-time parenting or, even more so, to find personal fulfillment in their roles as homeschooling mothers.

Power of Perception

A second unanticipated finding was the power and pervasiveness of perception evidenced in the life of each of the individuals and in the lives of their parents as well. The concept of perception interacted with faith, philosophy, relationship, socialization and educational experiences, adversity and transition, and pathway. Marjoribanks (1994) maintained that a child's perception of his environment is the key to the impact of that environment while VanTassel-Baska (1989) suggested that perception may be the key to the understanding of an individual's response to early familial adversity.

Pathway as Primary Desired Outcome

A third unanticipated finding was for at least two, if not three, of the families, the concept of pathway as a primary desired outcome. For them, pathway was defined not in the external sense of achievement but rather with respect to internal Christian development that may, in turn, lead to wise decisions and behaviors. The presence of faith described earlier may account for this perception of pathway as an expression of essence as opposed to a measurement of worth by particular accomplishments. It may also be due to a child-centered philosophy of education which focuses on achievement as a by-product rather than a goal of education (Grant & Piechowski, 1999).

Contentment

A fourth and final unanticipated finding was the notion of contentment with the present pathway of each individual. Each of the twelve participants, despite the particular pathway chosen by the individual, expressed a sense of contentment with that pathway. This could be due, in part, to the perception on the part of each parent that his educational expectations for his child had been met. This, in turn, could positively affect the individual's sense of contentment knowing that he had met parental expectations.

Issues

In addition to unanticipated findings, several issues bearing further investigation also emerged during the analytic phase of this study:

1. **With respect to family size and family SES, is there a point of diminishing return in relation to home education when the conversion of human capital into social capital is compromised? Ray (2000) reported possible ameliorating affects of home education on similar factors with respect to environment. Lam (1997) reported a similar effect but with respect to the use of authoritative parenting style and family status variables.**
2. **With respect to developmentally appropriate practices (DAP), although parents have been shown to be effective identifiers of intellectual giftedness in their children (Ehrlich, 1989; Silvermann, 1993), are they also able to identify DAP, make decisions concerning DAP, and implement DAP?**
3. **With respect to developmental delays, how are decisions reached and/or a balance achieved concerning delayed learning and remediation efforts? What are the costs of each and what are the consequences to the self-concept and self-esteem of the child? Similarly, is there an ameliorative effect of home education as asynchrony?**
4. **With respect to curriculum, what is the relationship between specialization and rigor across the curriculum? How are decisions reached concerning optimal levels of expertise?**
5. **With respect to parent-child relationships and perception, how do relationship and perception impact each other and which, if either, is the driving force? How does each of these constructs affect various aspects of the home education experience?**

6. **With respect to perception, in what ways does the construct being perceived affect the impact of the perception? If desirable, are there effective ways to alter perception?**
7. **With respect to the concept of faith, in what ways is it developed? How is its degree of impact affected? In what ways is it beneficial or detrimental to development? Does the impact vary with respect to differing religions? Might it be related to McCurdy's (1960) concept of fantasy and if so, in what ways?**
8. **With respect to passion, call, vocation, and pathway, what is the relationship among these concepts and their impact on adult actualization?**
9. **With respect to evaluation of the home education experience, how is it assessed and what constitutes either success or failure?**
10. **With respect to the decision to implement home education, what is the relationship between parental responsibility and children's rights?**

Intersection of Theories

Eisenhardt (1989) recommended theory-building research for use in areas for which existing theory seems inadequate. Less than inadequate, home education, as yet, has no theories to call its own (Cizek & Ray, 1995). While this exploratory study is not theory-building in the sense of the generation of new theory, it does offer not only validation of key theories of socialization, parental involvement, and talent development, but also presents the interaction of these

key theories as a means to further the understanding of the phenomenon of home education and its impact on intellectually gifted individuals.

An understanding of the implications of the process of the socialization may be enhanced through the study of Bronfenbrenner (1970, 1978), especially with respect to his indication of the need for a single individual to intensively care for a young child and for a single institution to be responsible for the total developmental oversight of the child, and through the study of Coleman and Hoffer (1987), especially with respect to their constructs of embeddedness and social capital.

An understanding of appropriate education for intellectually gifted individuals may be enhanced through the study of Gagne (1995), especially with respect to the impact of environmental catalysts on development; through the study of L. Coleman (1995), especially with respect to impact of specialized educational context on long-term learning; and through the study of VanTassel-Baska (1994), especially with respect to key components impacting the development of potential.

Armed with an understanding of the socialization process and of appropriate education for intellectually gifted individuals, a study of a synthesis of the eminence literature by VanTassel-Baska (1989) with respect to early familial and educational experiences may take on greater significance. Two key factors reported were a high degree of parental involvement coupled with a high degree of non-traditional education. This pattern, identical to the key features of home education, namely a high degree of parental involvement and non-traditional

education, completes the theoretical intersection of parental involvement, gifted education, and home education.

Conclusion

Emerging from the four case studies and consistent with the literature, then, is a pattern of individual development which may be expressed as follows (see Table 10): Given an individual with both a high level of intelligence and the presence of particular characteristics identified as gifted behaviors, and including a personal faith; and given parents who may also possess similar characteristics and faith as well as particular effective teacher traits; who with a philosophy of socialization that seeks to facilitate a sense of connectedness through the development of a strongly positive parent-child relationship, the development of a strongly positive sense of self in their child, and an intentional isolation in concert with intentional intergenerational interaction; and with a philosophy of education that seeks to maximize potential through the developmentally appropriate, intentionally focused individualization of an evolving curriculum that is consistently articulated over the K-12 period as the parent's teaching role progresses from that of direct instruction to that of facilitation may help to create a specialized educational context of home education consisting of a significant amount of healthy parent-child interaction which may enable the child to work through adversity and transitional periods, and which may lead the child along a pathway to an actualized adult life reflective of his identified calling, yielding contentment.

In 1970, Bronfenbrenner described the danger inherent in the lack of a single institution in America responsible for the oversight of the development of children. This statement is perhaps more true today in America than when it was first voiced nearly half a century ago. After exposing a precipitous decline in connectional opportunities for children that were at one time available in the family and to a lesser extent found in parochial schools, Coleman and Hoffer (1987) asked, "Is it possible that there are other institutions around which functional communities with intergenerational closure may develop?" (p.241). Rather than trying to restructure other institutions in an attempt to fulfill the connectional functions of the family, it may be possible that the search for an institutional substitute may actually lead back to the family itself.

New advances come from a radically different way of viewing the world and may result in a new paradigm (Edgar, 1988). Perhaps it is time for a new way of viewing the education of intellectually gifted children that may result in a renewed paradigm of the family as the primary educational and socialization institution. For families of children who are intellectually gifted, especially those parents and children who display a high level of commitment, persistence, and the capacity to work alone, home education may well be an effective educational choice that could, through intentional socialization practices and developmentally appropriate educational practices, prove to be a powerful educational context. For some, home education may go beyond the parent's use of the power of context in concert with the appropriateness of process and may become a way of life that is a solid preparation for the future through which each unique child

traverses an individualized path toward the optimal development of his potential, actualized not in achievement but rather in a pathway reflective of calling and contentment.

Implications

If home education is a viable educational alternative for intellectually gifted individuals, it could be helpful for those professionals in the established traditional educational system to consider in what ways they might support and enhance the educational growth of these individuals. Collaborative efforts might communicate proven teaching practices, academic planning considerations, and available community resources.

Parents of intellectually gifted children may consider increasing their knowledge of home education by attending local, regional, and national home education conferences and by selected reading in the areas of both home education and gifted education.

Recommendations

A deeper understanding of the viability of home education with respect to intellectually gifted individuals may be gained through the study of the impact of issues raised earlier in this chapter, such as specialization or perception, on the development of potential. Research with different population groups might stimulate comparisons of patterns and impacts that could in turn benefit all groups.

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Appendix A**Request for Suggestions of Possible Participants**

**4879 South Pioneer Road
Gibsonia, PA 15044
March 15, 2002**

Business address

Dear ----:

I am presently a doctoral candidate at the College of William and Mary in Williamsburg, Virginia and have recently received approval for my dissertation proposal. My research will focus on the impact of home education on intellectually gifted individuals. I am asking for your help in finding intellectually gifted individuals who are at least 18 years old and have been homeschooled for at least five years. Your provision of contacts or your forwarding of a cover letter and a questionnaire to possible contacts would be greatly appreciated.

Please feel free to call, write, or e-mail with any questions.

Sincerely,

**Tacey Hopper
724.444.7584
tacey@nauticom.net**

Appendix B**Cover Letter**

**4879 South Pioneer Road
Gibsonia, PA 15044
March 31, 2002**

Dear --,

I am a PhD candidate at the College of William and Mary in Williamsburg, Virginia. I am also a wife, a mother of two grown children and one young child, and have been engaged in home education for 20 years. I am presently writing my dissertation on the appropriateness of home education for intellectually gifted individuals.

Your name was suggested by —— as a possible participant in my study. I would appreciate your taking the time to complete the enclosed consent form and questionnaire and returning them to me in the envelope provided by (two weeks from the date of mailing). Your anonymity in the study will be ensured. If you have any questions before making a decision to respond, while answering the questionnaire, or after completing the questionnaire, don't hesitate to contact me.

Thank you very much for your assistance and your time.

Sincerely,

**Tacey Keller Hopper
724.444.7584
tacey@nauticom.net**

Appendix C
Consent Form

After having been informed of the following:

- (1) the nature of the research project,**
- (2) the extent of my involvement in the research project,**
- (3) that my participation is purely voluntary,**
- (4) that I may choose not to respond to specific questions,**
- (5) that I may end my participation at any point without any
penalty,**
- (6) that all information I give is confidential, and**
- (7) that my identity will not be disclosed,**

**I agree to participate in this study of the impact of home education
on the development of intellectually gifted individuals.**

Signed _____

Date _____

Appendix D**Preliminary Questionnaire for Intellectually Gifted Individual**

Please answer the following questions. All information will be kept strictly confidential.

Section A: Demographic Information

1. Full name _____
2. Date of birth _____
3. Gender _____
4. Ethnicity _____
5. Telephone number _____
6. E-mail address _____

Section B: Home Education Experience

7. How many years from kindergarten through high school were you homeschooled? _____
8. Specifically, at which grade levels and at what ages were you homeschooled?

Example: grades 6-12 and ages 9-16

9. Would you describe your home education experience as positive, negative, or mixed (circle one)? Why? _____

10. In the future, would you consider home education as a possibility for your own children? Why or why not?

Section C: Post-secondary Educational and Vocational Experiences

11. Did you attend any post-secondary (after high school) training? _____

12. If you answered "yes" to #11, please describe the type of training, subject, and duration. (Example: college/pre-med/4yrs; apprenticeship/farming/2yrs)

13. What is your present occupation? _____

Section D: Determination of Intellectual Giftedness

14. Have you ever been described as intellectually or academically gifted?

___ Yes ___ No

15. If you answered "yes" to question 14, what was the basis for that assessment?

Check any that apply:

___ Told by parent

___ Scored in the top 5% of an educational achievement or abilities test

___ Performed above typical grade level on academic tasks

___ Assessment by educational psychologist

___ Other

16. Please list the following scores, if known:

___ IQ

___ PSAT

___ ACT

___ SAT

17. Do you believe you are intellectually gifted? Why or why not?

18. Do you believe you have other specific abilities or gifts? _____

19. If so, please describe your other abilities and gifts.

20. Would you be willing to complete a more in-depth questionnaire as a research study participant? ___ Yes ___ No

Thank you. I really appreciate your taking the time to complete and return both this preliminary questionnaire and the consent form.

Appendix E

Individual Detailed Questionnaire

Please read the following questions and answer each one as completely as possible. Your answers will be kept confidential; in particular, information will not be discussed with your family.

Section A: Surroundings

1. List any groups, clubs, and organizations of which you were a part during the time that you were educated at home.

2. List any resources you used during the time in which you were educated at home (such as libraries, internet, school district resources, community college, etc.).
-

Section B: Persons

3. Circle the appropriate answer for each of the following characteristics as they apply to your mother.

	Strongly disagree	1	2	3	4	Strongly agree
High level of intelligence	1	2	3	4	5	
Emotional maturity	1	2	3	4	5	
Flexibility	1	2	3	4	5	
Relational ability	1	2	3	4	5	
Counseling skills	1	2	3	4	5	
Continual intellectual/creative pursuits	1	2	3	4	5	
Sense of humor	1	2	3	4	5	
Coping ability	1	2	3	4	5	

4. Circle the appropriate answer as it applies to your mother.

	Rarely	Occasionally	Often		
She demonstrated respect for you	1	2	3	4	5
She demonstrated warmth toward you	1	2	3	4	5
She trusted you	1	2	3	4	5
She established clearly defined limits	1	2	3	4	5
She consistently enforced rules/discipline	1	2	3	4	5

5. Circle the appropriate number that best describes your mother's parenting style:

permissive authoritative authoritarian

1 2 3 4 5

6. Circle the appropriate answer that best describes your relationship with your mother during the time in which you were educated at home:

Negative-----Positive

1 2 3 4 5

7. Were you able to express your thoughts and feelings to your mother during this period?

No -----Yes

1 2 3 4 5

8. Were your mother's basic beliefs and values different from yours?

No -----Yes

1 2 3 4 5

9. Circle the appropriate answer that best describes your current relationship with your mother:

Negative-----Positive

1 2 3 4 5

10. Are you currently able to express your thoughts and feelings to your mother?

No -----Yes

1 2 3 4 5

11. Are your mother's basic beliefs and values currently different from yours?

No -----Yes

1 2 3 4 5

12. Circle the appropriate answer for each of the following characteristics as they apply to your father.

	Strongly disagree	1	2	3	4	Strongly agree
High level of intelligence	1	2	3	4	5	
Emotional maturity	1	2	3	4	5	
Flexibility	1	2	3	4	5	
Relational ability	1	2	3	4	5	
Counseling skills	1	2	3	4	5	
Continual intellectual/creative pursuits	1	2	3	4	5	
Sense of humor	1	2	3	4	5	
Coping ability	1	2	3	4	5	

13. Circle the appropriate answer as they apply to your father.

	Rarely	Occasionally	Often		
He demonstrated respect for you	1	2	3	4	5
He demonstrated warmth toward you	1	2	3	4	5
He trusted you	1	2	3	4	5
He established clearly defined limits	1	2	3	4	5
He consistently enforced rules/discipline	1	2	3	4	5

14. Circle the appropriate number that best describes your father's parenting

style: permissive authoritative authoritarian

 1 2 3 4 5

15. Circle the appropriate answer that best describes your relationship with your father during the time in which you were educated at home:

Negative-----Positive

1 2 3 4 5

16. Were you able to express your thoughts and feelings to your father during this period?

no-----yes

1 2 3 4 5

17. Were your father's basic beliefs and values different from yours?

no-----yes

1 2 3 4 5

18. Circle the appropriate answer that best describes your current relationship with your father:

Negative-----Positive

1 2 3 4 5

19. Are you currently able to express your thoughts and feelings to your father?

no-----yes

1 2 3 4 5

20. Are your father's basic beliefs and values currently different from yours?

no-----yes

1 2 3 4 5

21. List other people who were involved/influential in your home education experience. Describe their input and your relationship with them.

Section C: Undertakings

22. Who initiated homeschooling? _____

23. Why was homeschooling initiated? _____

24. Did the reasons for continuing to homeschool change? _____

25. Who actually did the majority of the teaching? _____

26. How many children were being educated at home? _____

27. Estimate the amount of time spent in homeschooling activities.

Hours per day _____

Days per week _____

Weeks per year _____

28. In general, do you think you used your time constructively?

no-----yes

1 2 3 4 5

29. In general, did you feel intellectually challenged in your studies?

no-----yes

1 2 3 4 5

30. List your grade point average for your secondary schooling? _____

31. Please list specific scores for the following, if applicable:

GED _____

AP courses: _____ subject _____ score
 _____ subject _____ score
 _____ subject _____ score
 _____ subject _____ score

Graduate school entrance exam: _____ exam _____ score

32. List post-secondary educational institutions attended, major course concentration, certificate or diploma received, and grade point average, if applicable.

33. Evaluate your home education experience by listing three:

Strengths (1)
 (2)
 (3)

Weaknesses (1)
 (2)
 (3)

Costs (can be personal, familial, financial, etc.)
 (1)
 (2)
 (3)

34. Evaluate your traditional schooling experience (if applicable) by listing three:

Strengths (1)
(2)
(3)

Weaknesses (1)
(2)
(3)

Costs (can be personal, familial, financial, etc.)
(1)
(2)
(3)

Section D: Events

35. List any academic awards, any achievements, any accomplishments, and any public recognition received. Please indicate if specific award/recognition was received before you were twelve years old or after your twelfth birthday.

36. List any serious accidents, adversity or negative experiences you had as you were growing up.

37. Circle the appropriate number for each of the following personality traits as they pertain to you.

	Weak	1	2	3	4	Strong
Commitment		1	2	3	4	5
Ego strength		1	2	3	4	5
Insight		1	2	3	4	5
Persistence		1	2	3	4	5
Curiosity		1	2	3	4	5
Intensity		1	2	3	4	5
Self-discipline		1	2	3	4	5
Capacity to work alone		1	2	3	4	5
Motivation		1	2	3	4	5
Driving desire		1	2	3	4	5

Thank you for taking the time to complete this questionnaire. Hopefully, the information that you have provided will help further the understanding of the impact of home education on the development of intellectually gifted individuals.

Appendix F

Parent Questionnaire

Please read the following questions and answer each one as completely as possible. Your answers will be kept strictly confidential; in particular, information will not be discussed with your family.

Section A: Demographic Information

1. Name _____
 2. Ethnicity _____
 3. Marital status during home education years (married, widowed, separated, divorced, remarried, single) _____
 4. Present marital status _____
 5. Combined income of parents: ___ under \$25,000
___ \$25,000-49,999
___ \$50,000+
 6. List the names of your children. For each child, please give date of birth, gender, ethnicity, age at adoption (if applicable), ages when home educated (if applicable). Use the back of the page if necessary.
 7. List highest educational level you have completed and any degrees you have obtained.
 8. List teacher certification or other teacher training that you have had(explain).
-

9. List your vocational history specifying, if any, employment while homeschooling.

Section B: Parent Involvement Decision

10. Do you think your child is intellectually/academically gifted? Please explain your answer including examples of demonstrations of giftedness, professional evaluation, test scores, or activities.

-
11. Circle the appropriate number for each of the following personality traits as they pertain to your child.

	Weak	-----	Strong		
Commitment	1	2	3	4	5
Ego strength	1	2	3	4	5
Insight	1	2	3	4	5
Persistence	1	2	3	4	5
Curiosity	1	2	3	4	5
Intensity	1	2	3	4	5
Self-discipline	1	2	3	4	5
Capacity to work alone	1	2	3	4	5
Motivation	1	2	3	4	5
Driving desire	1	2	3	4	5

12. Circle the appropriate answer as it applies to your child.

	Rarely	Occasionally	Often	
He demonstrated respect for you	1	2	3	4 5
He demonstrated warmth toward you	1	2	3	4 5
He trusted you	1	2	3	4 5
He obeyed established rules	1	2	3	4 5

13. Rate your child's interaction skills with the following groups during the period of home education:

	poor	adequate	good	
chronological peers	1	2	3	4 5
younger children	1	2	3	4 5
older children	1	2	3	4 5
adults	1	2	3	4 5

14. Were either of your parents alive during the period of home education?

___ Yes ___ No

15. If you answered yes to #14, complete the following:

Supportive of home education: father: ___yes ___no

mother: ___yes ___no

Frequent contact with: father: ___yes ___no

mother: ___yes ___no

16. Circle the appropriate number that best describes your parenting style:

permissive

authoritative

authoritarian

1 2 3 4 5

17. Circle the appropriate number for each of the following personality traits as they pertain to you.

	Weak	-----	Strong		
	1	2	3	4	5
Commitment	1	2	3	4	5
Ego strength	1	2	3	4	5
Insight	1	2	3	4	5
Persistence	1	2	3	4	5
Curiosity	1	2	3	4	5
Intensity	1	2	3	4	5
Self-discipline	1	2	3	4	5
Capacity to work alone	1	2	3	4	5
Motivation	1	2	3	4	5
Driving desire	1	2	3	4	5

18. Circle the appropriate answer for each of the following characteristics as they apply to you.

	Strongly disagree	-----	Strongly agree		
	1	2	3	4	5
High level of intelligence	1	2	3	4	5
Emotional maturity	1	2	3	4	5
Flexibility	1	2	3	4	5
Relational ability	1	2	3	4	5
Counseling skills	1	2	3	4	5
Continual intellectual/creative pursuits	1	2	3	4	5
Sense of humor	1	2	3	4	5
Coning ability	1	2	3	4	5

19. What were your aspirations before you were married?

20. Were these aspirations fulfilled?

21. What are your present aspirations?

Section C: Parent Involvement Form

22. List your main areas of knowledge, skills, and interests.

23. Which of the items listed in #22, if any, would you consider to be a passion?

24. List the 5 greatest demands on your time and energy during the period of your child's home education.

(1)

(2)

(3)

(4)

(5)

Section D: Mechanisms of Influence

25. To what extent did you employ the following teaching techniques with your child?

	Rarely	Occasionally	Often
- modeling	1	2 3 4	5
- reinforcement	1	2 3 4	5
- direct instruction	1	2 3 4	5

Section E: Tempering Variables

26. List up to 5 expectations you had for your child's home education.

(1)

(2)

(3)

(4)

(5)

27. Which of these expectations (#26) were fulfilled?

28. Evaluate your child's home education experience by listing three:

Strengths (1)

(2)

(3)

Weaknesses (1)

(2)

(3)

Costs (can be personal, familial, financial, etc.)

(1)

(2)

(3)

29. Evaluate your child's traditional schooling experience (if applicable) by listing three:

Strengths (1)

(2)

(3)

Weaknesses (1)

(2)

(3)

Costs (can be personal, familial, financial, etc.)

(1)

(2)

(3)

Thank you for taking the time to complete this questionnaire. Hopefully, the information that you have provided will help further the understanding of the impact of home education on the development of intellectually gifted individuals.

Appendix G

Individual Interview Guide

This guide may be amended to include issues raised in the questionnaire. The interview will begin with a statement indicating the confidentiality of the responses.

- A. Surroundings
 1. home setting, neighborhood, community
 2. use of fantasy

- B. Persons
 1. role in the family (sense of security, belongingness, usefulness, responsibility, special position)
 2. paternal/maternal grandparents: vocation, interests, relationship
 3. interaction with others outside the family: chronological peers, younger children, older children, those with similar interests, adults (strangers, any close relationships?) - (isolation)?
 4. role models (who, why)
 5. feel liked by significant people in his life? (at what age?)

- C. Undertakings
 1. skills, interests, passions
 2. periods of particular interests
 3. educational expectations: mother, father, self. (pressure?)
 4. other expectations: mother, father, self
 5. fit between expectations of parents and self
 6. fit between expectations and implementation of home education
 7. role in groups, community (usefulness?)
 8. sense of efficacy (tasks, situations)

- D. Events
 1. changes in home education experience if could be done again
 2. transition from home education to traditional schooling and /or from traditional schooling to home education (problems? facilitating factors? impediments?)
 3. coping mechanisms
 4. meaningful experiences (initial/refining crystallizing experience)

- E. Vocational pathway
 1. sense of calling
 2. present vocational path (description; how chosen; reflect interests, aspirations, passions?; change in direction from earlier interests?)
 3. likely to change direction in future?
 4. contentment

Appendix H

Parent Interview Guide

This guide may be amended to include issues raised in the questionnaire. The interview will begin with a statement indicating the confidentiality of responses.

- A. **Parental involvement decision**
 - 1. description of how child interacted with family (child's role, special position, belonging, sense of security, usefulness, use of fantasy); in schools attended; community
 - 2. parent's accomplishments/calling
 - 3. educational experiences/values of the parent's parents
 - 4. parental role construction
 - 5. investment/commitment to raising child
 - 6. general opportunities for demands for parental involvement (by whom? beliefs? changes over the years?)
- B. **Parental involvement form**
 - 1. specific invitation/demand for parental involvement (from child? from spouse? from others?)
- C. **Mechanisms of influence**
 - 1. nature of parent's teaching role
 - 2. role models
- D. **Tempering variables**
 - 1. child's adversity/accidents (physical, emotional, relational)
 - 2. child's uneven development
 - 3. child's transition periods (puberty, school, contacts outside family)
 - 4. child's learning style
 - 5. child's educational strengths and weaknesses
 - 6. developmentally appropriate strategies: to maximize potential, to individualize education, choice of curriculum and level, use of texts
 - 7. origin/reasons for parent's educational expectations for child
 - 8. fit between parent's teaching style/strategies and parent's educational expectations for child
 - 9. periods of special interest for child
 - 10. crystallizing experiences for child
 - 11. awards/accomplishments of child
 - 12. child challenged by home education experience?
- E. **Vocational pathway**
 - 1. thoughts about child's present vocational path (reflect his interests, aspirations, passions? change in direction from earlier interests? likely to change direction in future?)
 - 2. parent's contentment/ child's contentment

Appendix I
Contact Summary Form

Contact Summary Form		
Date of contact _____		
With whom _____		
Initiated by whom _____		
Type of contact _____		
Place of contact _____		
Duration of contact _____		
Text page	Salient Points	Themes/aspects
1.		

(Miles & Huberman, 1994)

Appendix J

Document or Artifact Summary Form

Document/Artifact Summary Form	
Owner of document	_____
Type of document	_____
How obtained	_____
If/when to be returned	_____
Uses of document/artifact	_____
Other items to be obtained	_____
Summary of contents/artifact	
Themes/aspects to consider	_____
(Miles & Huberman, 1994)	

Appendix K

Data Analysis Procedures

- I. Within-case analysis
 - A. individual interview
 1. open coding
 2. axial coding
 3. selective coding
 - B. written report
 - C. repeat (a) and (b) with each parent interview
 - D. submit separate report to individuals for member-checking
 - E. revisions as necessary
 - F. visual data displays
 - G. repeat (a) through (f) with each of the next four groups
- II. Cross-case analysis
 - A. Search all 15 participant data for similarities, differences, and measurement of dimensionality along a continuum
 1. by concept
 2. by category
 3. by theme
 4. by pattern
 - B. Search paired cases for similarities/differences
(pair 1:2, 1:3, 1:4, 2:3, 2:4, 3:4)
 - C. Search according to data source
 1. all gifted individuals
 2. all mothers
 3. all fathers
 - D. Search according to data method
 1. all questionnaires
 2. all interviews
 3. all artifacts/documents
- III. Shaping hypotheses both within-case and cross-case
 - A. iterative tabulation of evidence for each construct
 - B. iterative tabulation of evidence for any relationships between constructs
- IV. Enfolding existing literature
 - A. Comparison for similarities (searching for relationships between and among fields)
 - B. Comparison for conflicts (evaluate for possible resolution or revision)
- V. Reaching Closure
 - A. Completion of data analysis procedures I – IV
 - B. Generation of insight
 - C. Considerations
 - D. Implications
 - E. Areas for further research

Appendix L

Data Analysis Forms

Within-case analysis: Concept

Concept	Location: Instrument, page # , item #			

Within-case analysis: Relationship / pattern

Relationship Pattern	Location: Instrument, page # , item #	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Within-case analysis: Understanding

Understanding	Location: Instrument, page # , item #	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Cross-case analysis: Concept, Relationship, Pattern, Understanding

Concept, Relationship, Pattern, Understanding	Location: Instrument, page # , item #	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Cross-case analysis: Pairing

Pairing: 1:2	Concept, Relationship, Pattern, Understanding	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Cross-case analysis: Data source

Data source & location: Individual, Mother, Father	Concept, Relationship, Pattern, Understanding	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Cross-case analysis: Data method

Data method: Questionnaire Interview Document Artifact	Concept, Relationship, Pattern, Understanding	Similarities	Differences	Intensity: 1 3 5 (low) (high)
				←-----→

Hypotheses shaping

Concept	Location	Frequency	Relationship	Comments, Inferences, Questions

Enfolding the literature

Concept, Relationship, Pattern, Understanding	Location in this Study	Location in the literature: Field and Source	Similarity	Difference	Comments, Inferences, Questions