

**Computers and Families**

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**A masters thesis submitted to the faculty of the  
Virginia Polytechnic Institute and State University**

**In partial fulfillment of the requirements in Human Development for the degree of**

**Master of Science**

**In**

**Family Studies**

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**January 24, 2001**

**Blacksburg, VA**

**Keywords: families, computers, technology, interactions**

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### **Abstract**

As we move into the new millennium, computers will increasingly become part of the human culture. As such, computers will continue to effect families, and there will undoubtedly be a proliferation of computer usage across family types. Because computers will be an integral part of change in the next millennium, it is important to examine their potential impact on the basic unit of society- the family. This study, descriptive in nature, provides insight on families and their interactions as related to computer use in their homes. Better understanding of computers and family life can help provide the basis for a smoother transition for families into the expanding world of information technology.

As the expansion of the digital age proceeds, its impact on family life would seem to warrant investigation. Information on who is using computers in the home, how those computers are being used, and how time is spent on computers can add to our appreciation of the impact of computer technology. In addition, the perceived impact of computers needs to be assessed in relation to outcomes for family life- interaction, relationships, and familial organization.

**This research was supported in part by a grant from the Provost's Office at Virginia Tech.**

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## **Chapter 1- Introduction**

### **Introduction**

As we move into the new millennium, computers will increasingly become part of the human culture. As such, computers will continue to effect families, and there will undoubtedly be a proliferation of computer usage across family types. As of 1998, 37% of households had a computer and 19% were connected to the Internet (NTIA, 1998). These numbers are significantly increasing and will continue to grow as computers become less expensive and more accessible to the public at large. The U.S. Department of Labor, Bureau of Labor Statistics (1999) reports increases in computer ownership in all areas of education, age, race, income and region. More recent data indicate that currently over 50% of households own a computer and over 60% percent of those owners are connected to the internet (Rainie & Kobut, 2000). In addition, 60% of people online report that the internet is an important part of their daily lives compared to only 32% only 3 years ago. Competition in the market of internet providing, internet advertising, and internet business alone will spark interest in making computers accessible to as many people as possible. The computer age is on the verge of major expansion, both in the workplace and at home. Information technology is becoming a significant part of family life (Hughes, Ebata & Dollahite, 1999).

As the expansion of the digital age proceeds, its impact on family life would seem to warrant investigation. Information on who is using computers in the home, how those computers are being used, and how time is spent on computers can add to our appreciation of the impact of computer technology. In addition, the perceived impact of computers needs to be assessed in relation to outcomes for family life- interaction, relationships, and familial organization. “There is much we need to know about the ways that this technology is altering the life of families and society” (Hughes et al., 1999, p.5).

Kraut (1998) and his colleagues, studying the use of the internet, found decreased communication between family members and slight increases in feelings of depression as the use of the internet increased in the family home. Similarly, the effects of other media, such as television, video games and movies on family life have also been demonstrated, and these media will effect personal and social development (Huston et al., 1992; Larson, 1995). Extrapolation of these effects, both positive and negative, to computers as a newer form of the media bolsters the need for investigation of families with computers.

Because of the interactive nature of computers, family members could potentially have the opportunity to interact together where a computer is concerned. Unlike television, a family could work together to investigate a topic on the internet; parents could help their children with educational software; siblings could play a game together; and, family members could use the computer to “chat” with geographically distant kin, bridging generation gaps. To ignore this huge market in family life could be a missed opportunity. Professionals could use the aforementioned types of interactions as activities they request families to do to foster and build familial interaction. Computers will be in our future and to utilize them in constructive ways may help build positive family environments.

Inevitably, cultural and sociological aspects of life are going to change. Keeping up with change in our society gives a chance at understanding life and the world in which we live. Because computers will be an integral part of change in the next millennium, it is important to examine their potential impact on the basic unit of society- the family. This study, descriptive in nature, provides insight on families and their interactions as related to computer use in their homes. Better understanding of computers and family life can help provide the basis for a smoother transition for families into the expanding world of information technology.

### **Theoretical Ground**

The use of theory to drive research is an important aspect of conducting research. Investigators must ground their research in a comprehensive review of the literature and

in theoretical contexts useful to the research question. Without incorporating a theoretical perspective, the reader is left to discern the context in which the study was made, and this leaves the door open to multiple interpretations. As such, readers with different political agendas and different theoretical orientations may distort the meaning implied in the research. For ambiguity to be erased, explicit statement of theory should be incorporated into all empirical research endeavors, so the readers will get the meaning and direction the researcher intends. With less ambiguity, a more concise, comprehensive body of literature can be formed which can be used in future research activity.

For family science to continue to be a driving force in social research and be useful to the public, it is imperative to utilize methods of incorporating theory into research design and reporting. A reciprocal interaction between research and theory is needed to advance family science, because theory leads to more relevant research which then can be used to better understand the family (Lavee & Dollahite, 1991). Through a fuller description and understanding of the family, enrichment of applied fields such as policy, education, or therapy can be initiated.

In the search for understanding of a complex unit such as the family, there is a will to discover the “truths” that describe family functioning. Ironically, due to the enormous amount of diversity in the family, there can not be a universal truth to describe the family. In fact, research merely adds empirically based “proof” on an infinitesimally small portion of understanding about family; that is, the small portion of the family that the research explicitly describes. However, even though there is only description of one aspect of family in a research article, with the incorporation of theory to that information, a broader generalization may be warranted. It is through research that the theory becomes more complex, relevant and valid, and a more general understanding of family functioning can result. The linkage between theory and empirical research reminds the scientist of the thin, permeable line that exists between facts in theory and science (Lavee & Dollahite, 1991). In a postmodern view, theorists realize “there is no such thing as ‘facts’ that imprint themselves photographlike on science’s journal pages” (Agger, 1998,

p. 19), but it is in theory that research becomes relevant. “It is theory that gives meaning to research findings, and it is theory that enables the development of systematic consensual explanation of family phenomenon” (Lavee & Dollahite, 1991, p. 370).

With the basis of the importance of the linkage between theory and empirical research, this study investigates families’ interactions as impacted by computer technology in the home. As mentioned earlier, there are no “truths” that explain family functioning; however, within the context of Family Development Theory, this study will explore family functioning on multiple levels and at different stages of a family’s development. The study does not cover all family stages, nor does it imply that all familial interactions within the covered stages are expounded upon. Instead, by applying the results of the data to a well-grounded and researched theory, this researcher intends to extrapolate from the results to add one more piece to the complex puzzle of understanding familial functioning.

According to Family Development Theory, there are at least four levels of analysis relevant in family development: the individual family member, family relationships, the family group, and the institution of the family (Rodgers & White, 1993). This study focuses primarily on the first three levels of analysis and extrapolates to the fourth level. In order to explore each level, all family members (including children ages 6 and up) were asked to complete surveys about computers in their families. From this data, each of the first three levels of analysis can take place, and when the study is taken as a whole, the fourth level is explored.

For the purposes of this thesis, the definition of family will be grounded in Family Development Theory as postulated by Rodgers and White: “A family is an inter-generational social group organized and governed by social norms regarding descent and affinity, reproduction, and the nurturing socialization of the young.” (p. 231). The social convention focused upon primarily in this thesis is the norm of the impact of computer technology on the family, a newer social standard that has received little attention in family studies. Computer technology definitely organizes and governs familial

interactions in a plethora of ways that impact family dynamics and family socialization, both internally and externally, and this study will expound upon some of those themes.

Furthermore, Family Development Theory implies that families change and progress through a series of stages that are not necessarily all inclusive nor required (Rodgers & White, 1993). For example, a young couple may cohabit, then marry, then have children, and so on. Each transition represents a new stage in a family's development (cohabitation, early marriage, pre-school aged children, adolescent-children, launching, divorce and so forth). This thesis focuses on families in the young-children and adolescent children stage, reminding the reader that each stage is not necessarily exclusive and can occur simultaneously. Other stages of family life may unintentionally come forth in this study, but the primary focus is on families with children.

Although the term computer technology encompasses a wide array of possibilities, this study will focus on home computers and connections to the internet only. Thus, when computer technology is mentioned from this point on, it is in reference to home computers and connections to the internet. To look beyond this, although important, is beyond the scope of this paper. Furthermore, familial interactions primarily take place in the home, so the investigation of home computing impact seems to be the primary target for this thesis. Dynamic, by definition, describes an entity that is changing, in flux, or in motion, and for the purposes of this study, family dynamics will refer to how a family interacts and changes on a daily basis.

### **Purpose**

This study focuses on computers and their effects on family interactions. As families increasingly have computers in their homes, family dynamics will likely be affected, as evidenced by the effects of other media introductions, such as television, video games and movies. This work investigates families who have computers, how the computers are being used, and how computer usage affects family relationships



In gathering data for this research project, a surveyed sample of families in the state of Virginia was investigated with regard to the use of computers, time spent on computers, how the family separates their time for computer use, experience and knowledge about computers, and how computers affect the family dynamics. The topics of the survey were chosen to help answer several research questions-

1. How do families utilize computers in the home?
2. What are the impacts on the family of computer availability and use?
3. Who uses the computer in the family, and in what capacities?
4. What are the positive and negative influences of the computer on the family system?
5. How are family functions, such as interactions, communication, and time spent together, affected by computer use?
6. What are families' histories of computer use and contact?
7. What generations in the families have computer experience, and how do computers affect interactions between those generations?
8. How have family dynamics changed resulting from computer technology?

In answering the proposed research questions, I intend for this study to be primarily descriptive in nature. The study looks at characterizing the sample of families chosen to describe them in relation to computer technology. The results then give insight into families in the sample, and can be a springboard for future research targeting a specific area pinpointed in this description.

## Chapter 2- Literature Review

Historically speaking, little peer-reviewed research has been conducted on computers and families. A review of the literature indicates only a few research articles dealing with the subject. Nevertheless, computer proliferation and availability of computers to families will generate the need for research in this area, and this proliferation will likely lead to an increase in research on the topic. Research in this area begins as early as 1985, and the review of literature will start there for historical context.

In 1985, Charles Figley edited a special edition of The Journal of Psychotherapy & the Family that had as its focus the topic of computers and family therapy (Figley, 1985). In his introduction, Figley wrote of the impact of computers on life and the family. “Even today, computers impact nearly every facet of our life, including the intimate environment of our home.” (p. 2). The home computer affords a family the ability to generate income, do banking, play games, and become educated. Figley suggests that the family has become more autonomous and powerful as a result of the computer. Furthermore, Figley suggests that the number of families with computers has increased and will continue to increase. Even then, in 1985, before the expansion of the information superhighway, researchers understood the potential impact computers would have on our society and its impact on families.

In the same publication, Rowan Wakefield (1985) also wrote of the impact of computers on family life and the need for investigation. Wakefield argued for filling the knowledge gap between the potential of the computer and what is known and less used of that potential for families and psychotherapists. Arguments for more cohesive research on computers are made and justified by the computer revolution of the time. Wakefield illustrated the large numbers of books on computers, such as how to use computers for business, or how to use computers in general, but indicated that only a small amount of information on computers and families, or computers and psychotherapy existed. Wakefield’s chapter suggested that computers empower families in a variety of ways, and ultimately changed the relationships within the family. In contrast, the author noted that

computers might generate family friction because the computer may require time in amounts frequently underestimated. Issues of time become even more salient with the advent of today's internet.

The previous two writings are important in that they provide some historical insight into the impact of computers in family life. Interestingly, the works of these researchers did not generate the proliferation of research the authors may have expected in the field of family studies. However, the authors did argue that computers in the home would change families. Empowerment of families will be achieved by taking advantage of the computer's versatility, the growing number of computer programs related to the family, and the new communication medium the computer has created (Wakefield, 1985).

The aforementioned research was conducted before the expanse of the information superhighway of today's internet, before the vast proliferation of home computer availability and ownership, before the growth of computer programming directed at the family, and before the ability of communication via e-mail. Yet, these researchers saw the importance of the impact of computers on families. Today, research becomes even more important to the understanding of families and their use of computers, and how those uses may impact the family's interaction and development. For example, a family that has just had its first baby may now have access to pediatric information, a direct link to its extended families to send pictures and receive advice, the ability to work from the home and stay with its child. These changes should be looked at to gain deeper understanding of families in the midst of a technological expanse that grows in large proportions day by day. "Continuing family and societal changes suggest an urgent need for much greater understanding of the impact of home computer use on families" (Wakefield, 1985, p. 19). I concur with the author and his work from 1985, and feel the need expressed earlier is even more profound today.

Robert Hughes (1999) and colleagues write about family life in the information age and address the need for further research on families and computers. They question who is using this technology, how is it being used, and who is not using this technology. The

authors mention the “digital divide” which separates computer users from non-users. Rural poor, rural and central city minorities, young households, and female-headed households are less likely to have access to computers (Hughes et al., 1999), but these numbers are changing and the digital divide appears to be slowly closing. Also, the authors stress the need for research involving the use of information technology in the family. This introduction also calls for information regarding professionals and their use of technology in reaching families. Their article is a call for work relating to computers and technology, and it will likely generate new research in this area.

In a study identifying family life education on the World Wide Web, Mark Elliot (1999) created a set of criteria categorizing web sites pertaining to family life education, and then investigated the prevalence of these sites on the web. He found 356 sites that met his criteria, with headings related to human development and sexuality (76), education and parenthood (71), family interaction (58), family resource management (56), interpersonal relationships (48), and family and society (47). These sites fit within the strict criteria set by the researcher, and they represent a number of quality family life education sites. These sites exist, but it is another question to see how often these sites are utilized. The web can be a great place to get information regarding family life. The reference list of sites found is located at [www.familytrack.com](http://www.familytrack.com).

Jennifer Bremer and Paula Rauch (1998) investigated children and computers and the associated risks and benefits. In an arena that allows the posting of any information, the web can be a place that is both healthy and risky for children. Children can be easily exposed to inappropriate material or be preyed upon in chat rooms by older predators. It is crucial for parents to be involved in their children’s online experiences. Chat rooms can provide a safe environment for children to develop socially without the anxiety of face to face contact. The practice of these social interactions can foster positive development and increase self-esteem. The authors address these issues about the possible benefits and risks to children. Likewise, computers can have benefits and risks to the entire family system.

In a recent non-peer reviewed study conducted by The Pew Internet & American Life Project, researchers examined internet use and looked at how specific internet use affected family life and communication (Rainie & Kobut, 2000). Furthermore, the study looked at gender differences in the use of internet technology. The researchers found that a surge of women have gone online within the last 6 months, leading to gender parity in the internet population. The report found that 55% of internet users say that email exchanges have improved their connections to family members, but despite the increased connections, there is not a feeling of increased emotional connectedness. In fact, 20% feel that email is too impersonal to discuss burdensome material (the report does not define burdensome material). Applying percentages to numbers of people on the internet, the report finds that 26 million Americans have started communicating via email with a family member with whom they had little previous contact; 24 million have used the Web to locate family and friends with whom they had lost touch; 16 million say they have learned more about their families since being online; and 30 million have at least one family member with a website. The study also provides evidence to dispel the notion that the internet isolates a person- “This survey provides clear evidence that email and the Web have enhanced users’ relationships with their family and friends- results that challenge the notion that the Internet contributes to isolation.” (p. 20). This report demonstrates a change in family dynamics associated with computer use in the home.

Watt and White (2000) explore computers and family life from a developmental perspective. The article explains family interactions theoretically, but does not have any supporting data. Using a family development framework, which states that families are heterogeneous across time and pass through distinct stages (Rodgers & White, 1993), Watt and White explain, “families at relatively distinct stages of development will be faced with differing opportunities and issues related to the family’s computer use.” (p. 2). The authors explain each stage and pose some theoretical possibilities related to family interactions and their computer use based on the stage of the family. For example, the article suggests that computers can add a new dimension to the individualization of early marriage and complicate a couples quest for joint time together, simply because the computer and the internet are tools that are used by individuals and can utilize a lot of

individual time. In fact, the addition of a computer in the family home increases time spent alone by 23% (Venkatesh & Vitalari, 1985), and tends to take time away from sleeping and family interaction (Venkatesh & Vitalari, 1987); and these are numbers found before the enormous expanse of the information superhighway know as the internet, which undoubtedly will add to those numbers. Watt and White (2000) also postulate that adolescents who tend to socially isolate themselves are at risk of becoming absorbed into the “safe” world of cyberspace, where they can finally interact socially without some of the inhibitors of interacting personally face to face. Watts’ article affirms and enumerates on many possibilities of family interactions as related to computers and family stage of development; furthermore, this paper would appear to affirm the use of Family Development Theory as a useful framework in studying the relationships fostered involving computers and families.

## **Chapter 3- Methodology**

### **Sampling**

A sample of families having computers in their homes was obtained in a stepwise manner from the state of Virginia. Extension professionals in extension programs around Virginia were asked to locate families willing to participate in a research endeavor who were known to own and have computers in their households. Agents in 4-H and Family and Consumer Sciences were asked to provide a list of 5 to 10 potential families with their addresses. A list of 103 families was generated. From this list, a first mailing was sent that included consent forms for adult participants in the study, permission pages for adults to sign for their children's participation, and an assent form for children to sign themselves. A second mailing was sent that included surveys for each family member who signed up to participate from the first mailing. A sample of 88 individual family participants were obtained for this thesis, representing 28 families. The average family size was near 4, but not all family members responded to the survey.

Because of the method used to obtain families and from those who replied, a limited demographic was obtained- those families with access to and who participate in extension programs. The sample families represented were 95% Caucasian and 5% other, with all families self reported as being married. Number of members of the family who live in the household ranged from 2 to 7 with a median of 4. Self-estimated family incomes ranged from \$20,000 to \$180,000 with a median of \$60,000 and a mean of \$66,163. Adult participants ages ranged from 29 to 72 with a median of 44 years, while children's ages ranged from 6 to 18 with a median of 15 years. The education levels of the adults in the study were represented with 14% having completed high school only, 12% having completed some college, 9% having received an associates degree, 44% with a bachelors degree, and 21% with a masters degree.

The children's grade levels ranged from 1<sup>st</sup> to 12<sup>th</sup> with 9<sup>th</sup> grade being the median. Interestingly, 39% of children in the study have their own computer and 18% have their own website, comparing to only 3% of adults with their own website (data was not obtained relating to adults with their own computer). Ranges of computer experience

varied from 1 to 20 years with a median of 8 among adults and most children (86%) reported beginning to use computers by age 7. Finally, 100% of adults report that their generation and their children's generation have computer experience and 42% of adults report that their parent's generation has had computer experience as well.

### **Data Collection**

After several researcher meetings developing ideas for the study, a pilot survey was constructed to elicit information potentially addressing and forming the previously mentioned 8 research questions. The pilot consisted of 40 open-ended, short answer questions related to computer use. This quasi-qualitative approach removed some researcher bias in the final questionnaire development, because the pilot responses were the database from which the final questionnaires were constructed. The pilot was given to eight colleagues of the researchers involved in this study; from the responses to the pilot, final questionnaires were developed for this thesis. A copy of the pilot questions is in Appendix A.

Two final instruments were created for the final project- a child survey and an adult survey. Both instruments primarily utilize a Likert type response scale, and both have three open-ended final questions to generate some qualitative data as well. The reason for creating two instruments was so the child survey could be created with an easy reading level and not be overwhelming, whereas the adult survey could be lengthier to generate a more comprehensive data source related to the entire family.

Originally, because of the topic being investigated, delivery of the survey was to be done by electronic mail. However, due to the possibility of owning a computer without e-mail and confidentiality concerns, U.S. mail was utilized for distribution of the survey. Interestingly, eight respondents wondered why electronic mail was not used and suggested using it after the first mailing!

Because a descriptive look at the entire family system is the primary focus of this project, surveys were sent to each family member who was intellectually able to complete a survey. Using Microsoft Word's reading level test, the child's survey had a reading level of 2<sup>nd</sup> grade so younger family members could respond to the survey. (In fact, one precocious 6 year old responded). The adult survey was constructed on a 6<sup>th</sup> grade level



to ensure ease of readability, since educational level of the potential respondents was uncertain. Using a two-instrument method, families can be described from the parent's perspective and from the child's perspective, giving a more comprehensive foundation for describing the targeted families. Both instruments can be found in the Appendices.

## **Results**

Eight research questions were initially posed and investigated for this research. Three open-ended questions were included in each survey in order to gain some qualitative responses. The following results report will be broken down into 8 sections- the first 7 sections will focus on answering the first 7 research questions and section 8 will look at the qualitative data received from the short, open-ended questions. The discussion report will inherently answer the 8<sup>th</sup> research question that is the essence of this thesis project, and encompasses the entire study.

### **Section 1**

#### **How do families utilize computers in the home?**

Adult computer use in the home was measured using a Likert scale in numbers of hours spent on the computer ranging from none to over 20 hours per week. The final results included- 5% of family members who don't use the computer at all, 19% who use the computer 1-5 hours per week, 19% who use the computer 5-10 hours per week, 30% who use the computer 10-20 hours per week, and 28% who spend over 20 hours per week on the computer.

Child computer use was simplified to a never, hardly ever, sometimes, a lot, and all the time Likert scale measurement. The child final results included- 0% never using the computer, 9% hardly ever using the computer, 24% sometimes using the computer, 31% using the computer a lot and 35% using the computer all the time.

Looking at these numbers it would appear safe to conclude that over 60% of family computer owners utilize their computers over 10 hours per week (a lot for child responses) and half of those use their computer over 20 hours per week (all the time for child responses). Using categories derived from the pilot study to generate possible uses

of the computer in the home, the adult questionnaire focused on 25 areas of computer use, broken down into 3 categories- adult uses of the computer categorized by hours per week, adult uses of the computer categorized by a Likert scale, and adult uses of the internet categorized by a Likert scale. These results are noted in tables 1-3. The child questionnaire focused on 8 separate, yet similar areas of computer use, broken down into 2 categories- child uses of the computer and child uses of the internet, both categorized using a Likert scale. These results are listed in tables 4 and 5.

Table 1- Adult Uses of Computers in the Home (In Hours Per Week)

Numbers are in percentages of total respondents (rounded)

	None	1 to 5 Hours Per Week	5 to 10 Hours Per Week	10 to 20 Hours Per Week	20+ Hours Per Week
Use the Computer	5%	19%	19%	30%	28%
Use the Internet	12%	49%	23%	16%	1%
Use E-Mail	7%	28%	35%	26%	5%
Play Games	70%	21%	9%	0%	0%
Conduct Business (Home)	33%	40%	19%	5%	5%
Use Computer with Children	33%	44%	21%	2%	0%

Table 2- Adult Uses of Computers in the Home (Likert Scale Responses)

Numbers are in percentages of total respondents (rounded)

	Never	Rarely	Sometimes	Often	Always
Financial Records	35%	23%	21%	14%	7%
Word Processing	9%	7%	26%	40%	19%
Create Cards, Calendars or Banners	56%	26%	12%	7%	0
Daily Planning (Scheduling)	63%	23%	7%	5%	2%
Faxes	86%	12%	2%	0	0
As an Answering Machine or Telephone	100%	0	0	0	0

Table 3- Adult Uses of the Internet

Numbers are in percentages of total respondents (rounded)

	Never	Rarely	Sometimes	Often	Always
Parenting and Family Information Sites	51%	35%	9%	5%	0
Read Books, Magazines, Or Newspapers	37%	26%	30%	7%	0
Get Software	51%	28%	19%	2%	0
Purchase Items	63%	19%	9%	9%	0
Chat Rooms	98%	2%	0	0	0
Games	98%	2%	0	0	0
Weather	21%	49%	19%	7%	5%
Entertainment Information	49%	28%	9%	14%	0
Travel Information	40%	28%	32%	0	0
Educational Purposes	19%	21%	40%	21%	0
Investing	63%	19%	9%	9%	0
News Reports and Updates	35%	26%	23%	16%	0

Table 4- Child Uses of the Computer

Numbers are in percentages of total respondents (rounded)

	Never	Hardly Ever	Sometimes	A lot	All the Time
Computer Use	0	9%	24%	31%	35%
Internet	11%	16%	16%	31%	27%
E-mail	7%	11%	33%	24%	24%
Games	4%	27%	42%	20%	7%
Homework	11%	18%	31%	29%	11%
Art	31%	36%	11%	18%	4%
Learning Things	0	0	40%	31%	29%
At School	2%	9%	42%	16%	31%

Table 5- Child Uses of the Internet

Numbers are in percentages of total respondents (rounded)

	Never	Hardly Ever	Sometimes	A lot	All the Time
Chat rooms	56%	33%	11%	0	0
Games	47%	36%	11%	4%	2%
Buy Things	56%	18%	11%	7%	9%
Chat with Friends	18%	11%	20%	31%	20%
Websites for Children	33%	44%	11%	7%	4%

## Section 2

### What are the impacts on the family of computer availability and use?

For this section, family computer availability was separated into two groups- families with one computer in their household and families with multiple computers in their household, and will be referred to as the family computer availability factor. This separation defines availability of computers in that more than one family member can have access to a computer at one time with multiple computers in the household. Furthermore, the data supports the notion that multiple computers in the household significantly changes the amount of computer use from those households with only one computer- individual computer use mean comparisons between one computer and multiple computer owners are significantly different ( $F=18.77$ ,  $p<.001$ ) and family computer use mean comparisons between one computer and multiple computer owners are also significantly different ( $F=39.104$ ,  $p<.001$ ).

Subsequently, three component factors were created using variables extracted from a factor analysis. A family computer use factor was calculated by taking the mean score of the variables individual computer use, family computer use, internet use, family internet use and e-mail use. Taking these five variables and combining them into one category gives a fuller description of family computer use, and from this point on will be referred to as the family computer use factor. Similarly, an impact on the family factor was calculated by combining mean scores of the variables family argument over computer time, feel like my family spends too much time on the computer, restrict computer time as a form of punishment for my family, regulate time spent on the

computer for my family, children teach me things on the computer, and I teach children things on the computer. These six variables were combined into one category and are heretofore referred to as the family impact factor. Lastly, a family computer interaction factor was calculated using mean scores of the variables use the computer with my children, use the internet with my children, play games on the computer with my children, use the computer for educational purposes with my children, and complete educational assignments (homework) on the computer with my children. These five variables combine to form what will be referred to as the family interaction factor. In short, each of the 16 aforementioned variables were chosen by factor analysis as the building block pieces to create three areas to analyze- impact, as measured by the family impact factor; use, as measured by the family computer use factor; and interaction, as measured by the family interaction factor.

Using an ANOVA to compare means, the family computer availability factor (1=families with one computer and 2=families with multiple computers) was compared with the family impact factor, the family use factor, and the family interaction factor, each calculated as described above. That is to say, within each factor, means of families with one computer (group 1 as previously noted) were compared with means of families with multiple computers (group 2 as mentioned above). There is a statistically significant comparison between computer availability and impact on the family ( $F=12.625$ ,  $p<.001$ ). Similarly, as one may deductively predict, computer availability statistically compares with computer use ( $F=31.092$ ,  $p<.001$ ). Lastly, there is not a statistically significant comparison between availability and familial interaction involving the computer ( $F=.000$ ,  $p>.05$ ).

### **Section 3**

#### **Who uses the computer in the family and in what capacities?**

For this section, several areas have been analyzed to break down computer use in the family. Gender comparisons were made separately among the adult responses and among the child responses. Then gender comparisons were made across the combined data of adult and child responses. Lastly, comparisons were made among adults versus

children in the combined data set. Again, ANOVAs were used as the statistical comparison of means in these groups. The following tables summarize the statistically significant differences between the groups being compared.

Table 6- Significant differences by gender among adult computer users in the home.

	<u>F</u> (1, 43)	<u>M</u> Males	<u>M</u> Females
Visits parenting information sites online.	F=3.774**	1.43	2.01
Use the computer with children	F=9.70**	1.52	2.20
Online for educational purposes	F=3.61*	2.33	2.91
Internet for investing	F=3.20**	2.01	1.38
News updates online	F=6.38**	2.62	1.81
Use the internet with my children	F=3.70**	1.33	1.82
Feel like children spend too much time on the computer	F=3.00*	2.00	2.60
Restrict computer time as a form of punishing children	F=4.23**	1.33	1.86
Educational assignments on the computer with children (homework)	F=3.34*	2.23	2.78
Leisure activities with family on the computer	F=11.21**	1.57	2.32
Children teach me new things on the computer	F=5.35**	2.52	3.32
Worry about how my children use the computer	F=3.44*	1.67	2.18
Computers have increased my extended family's interaction	F=3.09*	3.00	3.46

\*p<.10. \*\*p<.05.

Table 7- Significant differences by gender among child computer users in the home.

	<u>F</u> (1,44)	<u>M</u> Males	<u>M</u> Females
I learn things on my computer	F=3.771**	3.68	4.15
Parents say how much time I am allowed on the computer	F=7.627**	3.00	1.90
Parents say I spend too much time on the computer	F=5.456**	3.20	2.15
I help my parents with computer problems	F=3.334*	3.80	3.15
Parents use the computer with me	F=3.252*	2.20	1.75

\*p<.10. \*\*p<.05.

Table 8- Significant differences by age among all computer users in the home.

	F (1,87)	<u>M</u> Adults	<u>M</u> Children
Own website or web page	6.372**	1.02	1.20
Internet use	5.100**	2.82	3.43
Play games on the computer	64.935***	1.39	2.91
Play games online	19.010***	1.04	1.80
Contact family members by email	4.369**	3.54	3.08
Family argues for computer time	3.628*	1.85	2.36
Restrict computer time as a form of punishment	5.118**	1.63	2.19
Feel comfortable using the computer	4.569**	4.22	4.60
Children teach me new things on the computer	4.005**	2.95	3.47
Children chat with friends online	7.893***	2.34	3.02

\*p<.10. \*\*p<.05. \*\*\*p<.01

#### Section 4

##### What are the positive and negative influences of the computer on the family?

For this section of the study, several questions were asked regarding attitudes about computers in general, and with regards to an individual's family. These questions utilized a Likert scale response, which included strongly disagree, disagree, neutral, agree, and strongly agree. As such, the following results will reflect the attitudes of the adult participants in the study with regard to computers and families both in general and regarding their own family. The following table summarizes the findings.

Table 9- Adult perceptions of computers and families

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<u>M</u>
Computers help children get a better education.	0	0	30%	37%	33%	4.02
The internet is a reliable source for information	0	12%	33%	40%	16%	3.61
Families benefit by having computers	0	0	26%	49%	26%	4.00
The growth of the internet is overwhelming	0	0	23%	51%	26%	4.02
Rather have children on computer than watching TV	0	0	46%	47%	7%	3.61
Children spend too much time on computers	19%	28%	30%	19%	5%	2.63
Computers give children many more opportunities than before	0	0	7%	58%	35%	4.28
Computers have increased my immediate family's interaction	2%	28%	42%	28%	0	2.95
Computers have increased my extended family's interaction	0	21%	42%	30%	7%	3.23
Email has replaced letter writing and phone contact too much	0	35%	42%	21%	2%	2.91
The computer has negatively changed how our family interacts	9%	49%	28%	14%	0	2.47
I would like to return to life without a computer	44%	44%	12%	0	0	1.67
The internet can isolate children from their families	5%	44%	30%	21%	0	2.67
The internet is a source of fascinating, helpful, and useful material	0	0	14%	58%	28%	4.14

## Section 5

### What are families' histories of computer use?

Not surprisingly, families' histories of computer use vary. But, the intention for this section of the study is to compare families to see what factors impact that variability, and what variability exists for general computer use only. Specific uses of the computer



were not analyzed in a historical context within this project, and family history will simply refer to computer experience.

The demographic variables of family income, age and generations with computer experience were compared across adult individual's computer experience. The range of adult user's history ranges from 1 year to 20 years with a mean of 9.07 years and a median of 8 years. Listed in the table below are correlations comparing history to demographic variables.

Table 10- Correlational data for computer history of individuals

	Computer experience in years
Age	.193
Family Income	.487**
Generations with computer experience	.518**

\* Correlation is significant at the .05 level

\*\*Correlation is significant at the .01 level

As indicated in the table, there is a significant correlation between a family's income and their history of computer use. Likewise, if a family has multi-generational experience with computers (i.e., their parents have computer experience), then adults history also goes up. Age does not correlate significantly with amount of computer experience among adult users.

Analyzing the child data was done somewhat differently. The children's ages were taken and their years of computer experience were subtracted. This gave an age when the child started using computers, and gives a constant statistic that is the same for all children (a 17 year old user will obviously have an opportunity at more years of experience over a 7 year old user based solely on age, so a constant variable was needed for comparison). This number was then compared across several different demographic variables to see if differences in this sample were present. The mean starting age for this

sample is 6.64 with a median of 6 and a range from 2 to 12. No significant correlations or significant mean comparisons were present for child computer users.

## **Section 7-**

### **What generations in the families have computer experience, and how do computers affect interactions between those generations?**

Three possibilities are present for generational experience in this study- just the children have computer experience (1 generation); the children and the adults have computer experience (2 generations); and the children, the adults, and the adult's parents have computer experience (3 generations). No one in the study had only one generation of computer experience (this sample had a bit of a bias in that a criterion for inclusion in the study was that at least one computer was in the home), 58% of the sample has two generations of computer experience, and 42% of the sample has three generations with computer experience. Interestingly, there were no significant differences when comparing numbers of generations with computer experience to any of the variables in the study. At first glance, this may seem significant to this study, but generational experience was only a periphery variable and few questions were asked related to this topic.

## **Section 8-**

### **Results of the open ended short answer questions- a thematic analysis.**

The three open-ended questions posed relate to benefits, drawbacks and any additional information related to computers and one's family. The following sections will list the common themes found for each question, elaborated with verbatim comments from the respondents later.

## **Positive impacts on the family**

### Adults-

- Closer communication with distant kin
- Good research tool (i.e. looking up information)
- Disseminating information/ announcements
- E-mail/ contacting people
- Connection to the world
- Planning (vacations, finances)
- Do things more efficiently
- Availability
- Recreational use

### Children-

- Closer communication with distant relatives
- Easier to do reports
- Homework help
- Chat with my friends
- Help one another
- Learn a lot

## **Negative impacts on the family**

### Adults

- Kids on the computer too long/ stay up too late on the computer
- Chat too much/ play games too much
- Frustrated by computer errors/ can't get on-line
- Financial burden
- Exposure to explicit material
- Too dependent on computers
- Family arguments over computer time

## Children

- Argue over computer time
- Ties up phone
- Less family time
- Tend to waste time on games

## **Other comments about your family and computers**

- Computers have been a positive impact on the family
- Computers are important to families
- Computers make things faster
- We love our computer/computers

## **Direct quotes of several respondents**

### Adults-

- “My children have learned organizational and communication skills”
- “We are too dependent on computers today”
- “Computers take the place of outside play”
- “My children have learned nearly everything about taking apart and putting together computers. They constantly do projects while mom and dad encourage and offer advice. They have even made their own web pages.”
- “We struggle with the issue of violent computer games”
- “I worry about my children spending countless hours staring at a screen”
- “Bridge software has improved our bridge games”
- “Computers are the single greatest invention yet!”

### Children-

- “We can talk to out of state relatives or my dad when he is gone”
- “I can learn a lot from the computer”
- “I like to spend time on the computer, but I might miss a call from my friend”

“My computer relieves stress”

“I like to get parts and build computers with my brothers (12 yrs)”

“They help me learn and are far more entertaining than T.V.”

“I always have to wait for my sister to get off the computer”

Computers and my family- “I love them both!”

## **Chapter 4- Discussion and Conclusion**

### **Discussion**

Computer proliferation and their increased use in the home has been the hallmark of our recent society. Computer use in business is expanding at a quick pace and computer use in the home is paralleling that expansion. As computer technology increasingly influences our lifestyles, family dynamics will likely change in some regards, and the results of this study suggest some ways that families' relationships have been impacted by home computer technology.

Looking at adult uses of the computer shown in Table 1, it is easy to see that adults use their computers on a fairly consistent basis, but there is little family interaction time spent together on the computer. Adults and children seem to use the computer for different purposes. This dichotomy of use may suggest why parents and children spend little time together on their computers. Furthermore, the information supports the notion that computers can isolate family members from one another to some extent. However, it is also likely that family members do not see the computer as an interaction instrument, and as such, they do not spend much time doing things together on the computer. In fact, most of the uses of the computer in this study were individualistic items; even e-mail is used at the convenience of the individual user to leave a message for another individual user. The primary interactive uses of the computer involved helping children with computer related homework, and using chat rooms to talk with friends (primarily done by the child user). Otherwise, computers are individuals' tools. As evidenced here, family professionals and computer specialists have a new market that may warrant research-uses of the computer involving familial interaction. This kind of research can impact findings that computers tend to isolate individuals, and move computer technology into a pro-family light.

The primary use for the internet for both children and adults involves education or the search for information. However, information on families or familial activities was

not a major topic of interest in internet use. Parenting, family, or child information sites were not targeted sites by the majority of the sampled families. Nevertheless, adults concluded that the internet is a reliable source for information when used appropriately and families did spend some time together using the internet. Again, internet sites are primarily targeted to the individual user and do not promote multiple users.

Computer availability within the home was an important factor for this study. Households with more than one computer had a much higher rate of overall computer use for both children and adults. In addition to more time spent on the computer, the family was also impacted by their computer use in a more significant way than single computer owners. Family arguments over computer time, feelings of the family spending too much time on the computer, and the need to regulate how much time was spent on the computer were all significantly higher in multiple computer families. However, actual time spent interacting with computers within the family was not significantly different based on one vs. multiple computers in the household. These findings suggest that multiple computers in the household will not increase the amount of time spent together on a computer, but can increase some of the negative impacts on the family. As some families have concerns their children should have their own computer, this study may support the notion that multiple computers in the home may not be completely positive in regards to the entire family.

Gender differences among computer users are prevalent, and this study focused primarily on gender differences related to familial issues regarding computers in the home. Female mean scores were consistently higher when measuring family related topics. For example, women tend to visit parenting information sites, use the computer with their children, and use computer restriction as a form of punishment more frequently than men. Further, women also score higher in feelings related to the computer, such as worrying about how their children use the computer and feeling like their children spend too much time on the computer. These findings may categorically shape how men and women may perceive computers in their home differently. The emotional context of the impact of computers on family seems to rank higher for women. Furthermore, it seems

that women spend more time using the computer with their children. However, data for working women versus non-working women were not present for this study. This may be a result of the women in this particular sample as having more time to interact, or it may show that the emotional context of perceptions involving the computer may motivate action in interacting with the family as related to the computer. Interestingly, the male children reported a significantly higher amount of parental interaction. This may suggest that mothers connect an emotional piece to computer use, and tend to interact more with their male children. Perhaps mothers feel a higher emotional connectedness to their daughters, and thus, interact more with their male children on the computer as a different way to connect to their male child. Perhaps mothers see males by public perceptions that males use computers more than females; but, there were no statistical differences between male and female computer use within this sample. This would be an interesting topic for further research and any implications drawn from these data would be purely speculative.

This study also demonstrates a few categorical differences between adults and children regarding computers. Children's overall comfort level using computers was significantly higher than that of the adults. Following this, children use the internet more frequently, use chat rooms to talk with friends as an alternative to telephone, and play more games; whereas adults use the computer mainly as an information gathering tool. Both children and adults use their computers for work or school related activities. Interestingly, children had a statistically larger number of personal websites. It would seem children utilize the computer in many different ways than their parents. This finding indicates a potential change in popular culture and the future in regards to computers as children mature into adults. A paradigmatic shift is taking place in our culture as it relates to computer technology, and family research needs to catch up.

With this paradigmatic shift taking place, there is, and has been, a change in the perception of computers taking place. This study focused on a few perceptions of computers as related to the family, and there are a lot of positive perceptions of the computer. In fact, the majority of responses stated that families benefit by having



computers, but perceive families' interactions as not increasing with owning a computer. The main positive aspects of computers relate to the wealth of information available on the click of a mouse. As children get older, and the population at large becomes more comfortable with computer technology, computers will become a more integral part of life. However, with computers being very individualistic, we may also see a decline in familial interaction.

A family's history of computer use is indicative of future computer use. Within this sample of families there was a significant correlation between years of computer experience and numbers of generations with computer experience. Put simply, if a person's parents had computer experience or owned a computer, then they were likely to continue using computers in the future in their own families. Once a family has a computer, it is unusual for the next generation not to own a computer. Furthermore, families with higher incomes were also more likely to own computers and have more years of computer experience. This perpetuates the notion that lower income families who do not have access to computers in the home now will likely have children who also do not have computers in the home. However, as computers become more prevalent and less expensive, this trend will likely decrease, lessening the digital divide. The newer trend will be that higher income families will have access to computers that can do more things at a quicker pace. Therefore, although the digital divide appears to be closing somewhat, there will always be a gap as evidenced by computer capabilities and resources.

### **Conclusion**

The world is changing, and computer technology is becoming more a part of daily routine. This study demonstrates some impacts of the home personal computer on families in the state of Virginia. Parents are using the computer with more frequency and younger generations are growing up learning to use computers sometimes before they can read. This shift in technology use requires a similar shift in the approach to studying families. One can no longer ignore the impact of the home computer, and researchers need to incorporate home computer effects into their studies on families. Family

Development theory suggests that families progress through distinct stages, and this study shows how two stages- families with young children and families with adolescents may be impacted by computers in the home.

Interactions within the home may also be impacted by computer technology, as this study suggests. Computers, by their very design, are individualistic machines. Granted, communication between individuals can be fostered by computer technology, but human interaction could be lost. This creates a false sense of interaction, when really the computer is still individualistic. Communication via computer is different than actual face-to-face communication and those differences need to be studied as applied to families. Loss of non-verbal communication, loss of emotional content, and loss of voice inflection are but a few differences in this mode of communication. Computers tend to draw individuals away from human contact and allow contact to be made through a machine. As one parent mentioned, “computers take away from my child’s outside play.” This study also suggests that computers can take away from family interaction time as well.

Although long distance communication is enhanced, and families can keep in contact when separated by long distances, computers can isolate family members from one another when they are in close proximity. Researchers can begin to look at the family as impacted by computers in the home. This study merely scratches the surface of possible impacts of computers on the family, but does open a door to understanding how computers can impact families. Are “computers the single greatest invention yet?” as one respondent suggests. Perhaps, and being so important to daily life today, they also impact family life in many ways.

### **Implications for Future Research**

1. Do families know what kind of information is available on the internet pertaining to families, and will they use this information?
2. Do heavy computer users differ by activity over other users?

3. What kind of uses for the computer involve family members interacting with one another?
4. Where do families get their information pertaining to technology and families?
5. Do women spend more time interacting with their children on the computer (comparing working mothers to non-working mothers)?
6. Why do males tend to get more computer involvement from their family when usage statistics say young women and men use the computer evenly?
7. Are computers individualistic machines and do they have to be?
8. How does computer interaction differ from face to face interactions?
9. Looking at historical impacts of other media technology, where is computer technology going in relation to families?

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## **Appendices**

### **Appendix A- Pilot Questionnaire**

Topic: Impact of computers on family choices, interactions and everyday life  
Descriptions of families and their use of computers

#### **Pilot Questions**

1. How much time a day, on average, do you use a computer?
2. When do you use your computers?
3. Where do you use computers?
4. When was your first experience using computers and what were the circumstances?
5. What do you use the computer to do (List 8 things)?
6. What does your family use the computer to do (List)?
7. How do you utilize e-mail?
8. What do you use the internet for?
9. What magazines, books, or newspapers do you look at on line?
10. How can families interact using a computer?
11. How has the computer effected your interactions with people?
12. What generations in your family have computer experience?
13. Why do you like or dislike the computer?
14. What kinds of benefits do computers have in your family?
15. What kind of negative impacts do computers have on your family?
16. How have computers effected the family budget?
17. How many computers do you own (desktop and laptops)?
18. Do you access computers in other places? If so, where?
19. Do your family members argue over time for using the computer?
20. Who gets to use the computer if two people want to use it at the same time?
21. Is the computer used for educational purposes?
22. What kinds of computer programs are used?
23. How did you learn to use the computer?
24. What kinds of things can your computer do (List 8)?

25. Of those eight things, what do you use your computer to do?
26. How much time is spent on the computer with more than one family member each week?
27. How is that time, with more than one family member, spent?
28. How has the computer effected relationships in your immediate family?
29. How have computers effected relationships in your extended family?
30. What kind of computer do you own and what processor does it have?(For example, Gateway P.C., 233 MHz Pentium II
31. What are some ways to increase family interactions involving the computer?
32. Do your children use e-mail to contact relatives?
33. Do your children prefer contacting relatives over the computer?
34. How has e-mail effected relationships in your immediate and extended families?
35. Have you used the internet for information regarding your family or family interactions? If so, what kind of information did you seek and how did you seek it?
36. Have you ever visited any parent-child interactive sites on the internet?
37. What kind of leisure activities do you use the computer for?
38. What is our history of using computers?
39. How did you acquire your computer?
40. What kind of computer accessories do you have (i.e. printer, scanner etc.)?
41. How do you get access to the internet?
42. What questions should we have asked you regarding computers and family?

## Appendix B- Adult Questionnaire

### Adult Survey

#### Section 1-

1. Gender

1. male
2. female

2. Age \_\_\_\_\_

3. Marital Status \_\_\_\_\_

4. Number of Children and their ages \_\_\_\_\_

5. Relationship to each child (i.e. mother, father, stepfather, stepmother etc.)

6. How would you define your racial or ethnic identity

1. American Indian
2. Asian or Pacific Islander
3. Black, African American
4. Hispanic, Latino
5. White
6. Other \_\_\_\_\_

7. Family Income \_\_\_\_\_

8. How many family members live in your household? \_\_\_\_\_



9. How many computers are in your household (desktops and laptops)? \_\_\_\_\_

10. I have my own website or webpage

1. Yes
2. No

11. How many years of computer experience do you have? \_\_\_\_\_

12. What generations in your family use computers? (my generation, my parent's generation, my children's generation) Circle all that apply.

13. Education

- Less than High School degree
- Completed High School
- Some College
- Associates Degree
- Bachelors Degree
- Masters Degree
- Doctoral Degree

14. How did you learn to use a computer?

1. Self taught (books, trial and error)
2. My parents
3. My children
4. School
5. Other \_\_\_\_\_

**Section 2- Please use the selections below to answer questions. Circle your responses**

None	1 to 5 Hours per Week	5-10 hours per Week	10-20 hours per Week	20+ hours per Week
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

- |   |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| 14. I use the computer                        | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 15. My family uses the computer               | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 16. I use the internet                        | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 17. I use e-mail                              | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 18. I play games on the computer              | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 19. I conduct business at home on my computer | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 20. I use the computer with my children       | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 21. I work on my website (if applicable)      | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |

**Section 3- Please use the selections below to answer questions. Circle your responses**

Never	Rarely	Sometimes	Often	Always
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

- |   |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| 22. I work with financial records on my computer                | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 23. I use word processing software                              | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 24. I use the computer to create cards,<br>calendars or banners | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |

Never	Rarely	Sometimes	Often	Always
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

- |  |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|
| 24. I use my computer for a daily planner<br>or for scheduling | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 25. I use my computer for faxes                                | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |

26. I use my computer as an answering machine  
or as a telephone 1 2 3 4 5
27. I visit parenting information sites on-line 1 2 3 4 5
28. I read books, magazines, or newspapers online 1 2 3 4 5
29. I use the internet to get software, software  
upgrades, or computer accessories 1 2 3 4 5
30. I use the internet to purchase items (books,  
CDs, magazines, toys etc.) 1 2 3 4 5

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

31. I visit chat rooms 1 2 3 4 5
32. I play games on-line 1 2 3 4 5
33. I get weather reports on-line 1 2 3 4 5
34. I get entertainment information on-line (such as  
movie reviews, TV recommendations, etc.) 1 2 3 4 5
35. I get travel information on-line (tickets,  
reservations, resort listings, vacation  
planing, etc.) 1 2 3 4 5
36. I use the internet for educational purposes 1 2 3 4 5
37. I use the internet for investments and investment  
information (stock quotes, stock purchases, IRAs,  
mutual funds, etc.) 1 2 3 4 5

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

38. I get news updates on-line (news reports,  
current events, etc.) 1 2 3 4 5
39. I use the internet with my children 1 2 3 4 5

40. I play games on the computer with my children 1 2 3 4 5
41. I use educational programs with my children 1 2 3 4 5
42. I contact family members by e-mail 1 2 3 4 5
43. My family argues over who gets to use the  
computer and for how long 1 2 3 4 5

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

44. I feel like my spouse spends too much  
time on the computer. 1 2 3 4 5
45. I feel like my children spend too much time  
on the computer. 1 2 3 4 5
46. I restrict computer time as a form of  
punishment for my children. 1 2 3 4 5
47. I spend time with my children doing  
educational assignments on the computer 1 2 3 4 5
48. I have concerns about what my children use  
the computer for. 1 2 3 4 5
49. We have family discussions about our computer  
use. 1 2 3 4 5
50. I spend time in leisure activities (games,  
chatting, shopping) with my family on the  
computer. 1 2 3 4 5

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

51. I go to the internet when I have family troubles  
or questions where I need advice. 1 2 3 4 5

52. I feel like the computer has positively affected  
how our family interacts.                    1     2     3     4     5
53. I feel comfortable using the computer.                    1     2     3     4     5
54. I regulate the time my children spend on  
the computer.                    1     2     3     4     5
55. I feel like email has replaced letter writing and  
phone contact in my family.                    1     2     3     4     5
56. I feel more isolated from my children because  
of the computer.                    1     2     3     4     5

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

57. My family spends time together on the computer 1     2     3     4     5
58. I teach my children new things on the computer 1     2     3     4     5
59. My children teach me new things on the  
computer                    1     2     3     4     5
60. I worry about how my children use the  
computer                    1     2     3     4     5
61. My children chat with their friends on-line 1     2     3     4     5

**Section 4- Please use the selections below to answer questions. Circle your responses**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

62. Computers have helped my children get  
a better education.                    1     2     3     4     5
63. The internet is a reliable source for information 1     2     3     4     5
64. Families benefit by having computers                    1     2     3     4     5

65. I would rather my child be on the computer than watching television 1 2 3 4 5
66. The growth of the internet is overwhelming 1 2 3 4 5
67. My children spend too much time on the computer. 1 2 3 4 5
68. I spend too much time on the computer 1 2 3 4 5
69. Computers give children many more opportunities than before. 1 2 3 4 5

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

70. Computers have increased my immediate family's interaction with one another (family living at home) 1 2 3 4 5
71. Computers have increased my extended family's interaction with one another (family not living in home) 1 2 3 4 5
72. Email has replaced letter writing and phone contact too much 1 2 3 4 5
73. The computer has negatively changed how our family interacts. 1 2 3 4 5

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

74. I would like to return to life without a computer. 1 2 3 4 5
75. The internet can isolate children from their families 1 2 3 4 5



## Appendix C- Child Questionnaire

### Child/Teenager Survey

Please answer all the questions as best as you can. If you don't understand a question, please ask your parent for help. Thank you so much for your help.

#### Section 1-

1. I am a

Girl \_\_\_

Boy \_\_\_

2. I am \_\_\_\_\_ years old.

3. I have my own computer.

Yes \_\_\_

No \_\_\_

4. I have my own website or webpage

Yes \_\_\_

No \_\_\_

I don't understand \_\_\_

5. How many years have you been using computers? \_\_\_\_\_

6. I am in \_\_\_\_\_ grade.

7. How did you learn to use the computer?

My parents \_\_\_

At school \_\_\_

Some other way (write what that is) \_\_\_\_\_





22. I feel comfortable using the computer           **1**    **2**    **3**    **4**    **5**
23. My parents say how much time I am allowed   **1**    **2**    **3**    **4**    **5**  
to use the computer.
24. My parents say I spend too much time on the   **1**    **2**    **3**    **4**    **5**  
computer.
25. I help my parents with computer problems       **1**    **2**    **3**    **4**    **5**
26. I chat with my friends on-line                   **1**    **2**    **3**    **4**    **5**
27. I would rather watch TV than use my           **1**    **2**    **3**    **4**    **5**  
computer.

<b>Never</b>	<b>Hardly Ever</b>	<b>Sometimes</b>	<b>A lot</b>	<b>All the time</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

28. My family spends time together on the       **1**    **2**    **3**    **4**    **5**  
computer.
29. I use e-mail to write to my relatives           **1**    **2**    **3**    **4**    **5**
30. I visit websites for children or teenagers       **1**    **2**    **3**    **4**    **5**
31. My family argues over who gets to use the     **1**    **2**    **3**    **4**    **5**  
computer.
32. I like to be alone on the computer            **1**    **2**    **3**    **4**    **5**
33. I use computers at school                       **1**    **2**    **3**    **4**    **5**
34. My parents use the computer with me           **1**    **2**    **3**    **4**    **5**

**Section 3-**

35. List some good things about computers and your family

36. List some bad things about computers and your family.

36. Write anything else you would like to say about computers and your family here.

## Appendix D- Sample Description

N=88

<b>Status</b>	Adults- 41 Children- 47
<b>Gender</b>	Males- 46 Females- 42
<b>Children's Ages</b>	Ages 6-9- 6 Ages 10-11- 5 Ages 11-12- 7 Ages13-14- 6 Ages 15-16- 15 Ages 17-18-. 9
<b>Adults Ages</b>	Ages 29-35- 7 Ages 35-39- 6 Ages 40-45- 13 Ages 45-49- 11 Ages 50-55- 5 Ages 56+- 5
<b>Racial Identity</b>	White- 85 Other- 3
<b>Family Members at Home</b>	2- 6 3- 22 4- 20 5- 34 7- 6

<b>Computers in Home</b>	1- 48
	2- 12
	3- 12
	4- 6
	7- 4
	10- 6

<b>Have own website</b>	Yes- 10
	No- 78

## **Vita**

### **Ryan T. Greene**

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Salem, VA 24153

**Education** Ph.D. Counselor Education (in progress)  
Virginia Polytechnic Institute and State University  
Blacksburg, VA

MS, Family Studies  
Virginia Polytechnic Institute and State University  
Blacksburg, VA

BS, Family and Child Development, May 1996  
Virginia Polytechnic Institute and State University  
Blacksburg, VA

BA, Liberal Arts and Sciences, May 1996  
Minors include: Chemistry, Biology, and Psychology  
Virginia Polytechnic Institute and State University  
Blacksburg, VA

## **Skills**

### **Counseling**

- Counseling Internship at the College of Health Sciences 2000-present
- Facilitator of Caregiver Support Group 1998-present
- Completed 1 year Counseling Internship at Cook Counseling Center 1999-2000
- Counseling Practicum- Blacksburg High School- 1999
- University Supervisor of Masters Level Intern Students 1999-present

### **Teaching**

- Lifespan Development Course 2000
- 2 Classes Counseling Diverse Populations 2000
- Class Legal and Ethical Issues in Counseling 1999

### **Research**

- Juvenile justice system program evaluations
- Part of team formulating statewide forms for program evaluation in the juvenile justice system
- Understanding of statistical analysis and experimental design

### **Work**

- Computer Lab Assistant, working with statistical programs 1998-present
- Adult Day Services, working with clients with functional needs, both physical and mental 1997-2000
- Graduate Assistant 1997-present