1995

Feasibility of Home Videogames as a Self-Help Tool for Children

George A. Spisak
Ithaca College

FEASIBILITY OF HOME VIDEOGAMES AS A SELF-HELP TOOL FOR CHILDREN

by
George A. Spisak

An Abstract

of a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in the School of Communications at Ithaca College
December 1995

Thesis Advisor: Dr. Sandra L. Herndon

FEASIBILITY OF HOME VIDEOGAMES AS A SELF-HELP TOOL FOR CHILDREN

A Thesis Presented to the Faculty
of the School of Communications
Ithaca College

In Partial Fulfillment of the
Requirements for the Degree
Master of Science

---

by
George A. Spisak
December 1995

Ithaca College
School of Communications
Ithaca, New York

CERTIFICATE OF APPROVAL

MASTER OF SCIENCE THESIS

This is to certify that the Thesis of

George A. Spisak

submitted in partial fulfillment of the requirement for the degree of Master of Science in the School of Communications at Ithaca College has been approved.

Thesis Advisor: _____

Candidate: _____

Chairman, Graduate Program in Communications: _____

Dean of Graduate Studies: _____

Date: 1-10-96

Acknowledgements

I would like to thank all of the people who have provided me with the assistance to complete this project. There have been many who have guided me through the maze of information contained in several libraries. Many thanks go out to friends who, over coffee, have listened to my complaints and frustrations concerning this paper. A very special thanks goes to Mr. Vorhees of Corning Community College and his uncanny skill of making the path of library research both exciting and rewarding.

There are very few words that would ring the praise or show the appreciation I have for my most esteemed advisor Dr. Sandra L. Herndon. Dr. Herndon was able to inspire confidence in my most darkest of moments. Dr. Herndon's levels of academic expertise and expectations are legendary in this institution. Her expertise and high academic standards are models of excellence that I will try to emulate and transfer to all the facets of my professional and personal life.

The other half of my advisory team was Dr. Gordon Rowland. Dr. Rowland is capable of providing criticism in such a manner that clarity of purpose and the path to completion is the end result. I only regret that I never had the privilege of taking one of his classes. My deepest and most sincere thanks goes out to Dr. Rowland.

I can not bestow enough appreciation on my wonderful and enlightened wife, Mary. Mary has been the beacon of hope and the tower of strength that I have relied upon through all phases of this project. She was the one who pushed me to apply for graduate school. It was Mary who rescued my dreams of completion when adversity doomed me to failure. Her nurturing and faith in my abilities have been unyielding. To Mary I pledge my eternal love.

ABSTRACT

The purpose of this study is to investigate the feasibility of using home videogames as a self-help tool for children. A review of the related literature lends support to this concept by exploring the effects of television and videogames, and the theories of learning through play as described in the appropriate journals. Many parent opportunities to serve as role models for their children are being reduced because of economics and dysfunctional marriages. Much of the time formerly spent with their children is also being displaced by the media in the form of television and videogames.

A survey designed to answer questions about parents' and children's attitudes and perceptions of home videogames should add to the limited research in this area. The survey indicates that parents believe children are learning skills when playing home videogames. It also shows an interest in having home videogames teach more defined skills. There is a favorable acceptance by both the parents and the children in home videogames as indicated by three out of four households reporting owning a home videogame system.

The research indicates that an infrastructure and desire to play home videogames exists. Taking advantage of these elements and providing didactic content to the videogames would make their use as a self-help tool for children feasible.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

People do not have to look too far to find how their lives are affected by technology as it controls many aspects of our daily existence from the workplace to the home. It has changed the way we work and the way we play. For example, hardly anyone or anything in our culture is left untouched by the influence of computers. Modern society would be hard pressed to live without computers. The fast pace of modern life has created the need for computers to intervene in and control activities that only a generation ago were left up to individuals.

Education, entertainment, and domestic duties from household finances to programmed food preparation have made us increasingly dependent on the computer. Many American households are slaves to the computer in the sense that much time and effort must be appropriated to earn the money required to support our computer mediated lifestyles. We are all victims of the frantic pace at which computers operate.

We are a society in transition. Computers have changed the world and how we relate to it. This transition may be perceived as a threat by those who are unwilling or unable to change. It is a sure bet society will never give up the computer. That would be analogous to our ancestors giving up fire. Just as our lives are forever changed by the introduction of fire and our ability to control it, so it is with computers. Technology moves toward greater sophistication regardless of its use or misuse or relationship to humankind.

Television is another of the many examples of modern technology that certain critics claim we have become slaves to. Control is the key operative in our relationship with technology. We must be able to control technology in order for us to be its master and not its servant. Television, in its infancy, was thought to have great potential as an educator as well as an entertainer of the masses. Commercial television programming is primarily driven by profit motive, and entertainment programming delivers more profit than educational programming. The marriage between television and computers in the form of home videogames once again has unleashed a huge potential for commercial profit and another vast and seemingly limitless potential for education. We know television

can influence and educate viewers, and certain inferences can be drawn from this and applied to home videogames. The goal of the researcher is to investigate the feasibility of using home videogames for the socialization and education of children. The researcher believes there is an infrastructure already in place that would facilitate home videogames being used for this purpose.

Rationale

In the late forties a new medium began to make its presence known in American households. The prolific infiltration of television in the American home has altered the American family in dramatic ways. Leisure-time activities of the past have been replaced by endless hours of television viewing. Family members of all ages are allowing themselves to be inundated by the glow of the cathode ray. Television viewing started out as an activity that families enjoyed together. Like the radio, it was a shared entertainment experience. Parents would consult the listings, and the family would gather and watch what was decided upon. That was in the early 1950s. Parents exercised more control over television viewing, and there was a relatively limited selection of

programs. Many things have changed since the 1950s especially in the areas of mass media and economics.

Economic factors today also have made it commonplace that many households no longer function as they did in the past. Often both parents must work to provide a decent standard of living for the family. Many families have been altered by the high rate of divorce in America. Parenting in this country has been drastically affected by the economy, the changes in family structure, and the enormous presence of television and its accompanying entertainment devices. Out of necessity the role of parenting is more frequently being delegated to other people or systems of technology.

As children get older, many parents knowingly or unknowingly assign the role of parenting to systems of technology. Television has assumed the role of part-time parent in many American households. Present in most homes, it now offers an abundant amount of programming. Often this is the cheapest alternative to expensive childcare. When a child comes home from school the television may be the only companion till a parent arrives. It occupies our children while we are at work, and often while we are at home with them. People create a working and functional reality from their life experiences. Mass media is part of that

life experience, and in some way it is responsible for shaping our individual and collective realities.

Television portrays a constructed reality to its viewers. As adults, most of us are aware of this. Can children make such distinctions? The role models and themes that television presents are very repetitious. There is a great deal of prosocial content to most of the themes and story lines in that good triumphs over evil in most instances, but unfortunately the vehicle good uses for its triumph is often violence. Parents who are concerned with the amount of violence on television can obtain more access to alternative programming through cable services or by the use of home satellite receivers. In recent years there has been an increase in the number of television channels, and a vast selection of entertainment and educational material is available for consumers to play on home video-cassette recorders.

The American household has also seen, in more recent times, the appearance of home videogames. These videogames are played on simple computer terminals that use the television as a display device. The first wave of popular home videogames hit the American public in 1979. By 1985 the home videogame craze had reached its lowest point because a glut of poorly designed games had flooded the market (Kinder, 1991).

The Nintendo corporation of Japan realized there was a huge potential for its more sophisticated videogame system. After an extensive advertising campaign, Nintendo soon captured 20 percent of the U.S. toy market. By the end of 1989 there was a Nintendo system in one of every five homes in the United States (Kinder, 1991). Nintendo predicted that number would rise to one in three by the end of 1990. The Nintendo videogame system made television a more interactive experience then its predecessors. This enabled television to become more like a playmate instead of a passive form of entertainment. Like any playmate, videogames have the potential for being a socializing agent.

In the state of Minnesota, a pilot program had been planned in which home videogame terminals were to be used to play the state lottery (Minnesota State Lottery, 1991). The question of whether or not this constitutes a misuse of the medium is being asked. Home videogame terminals have been used almost exclusively for children's entertainment. The transition of the game terminal to an in-home gambling device has opponents warning that we are sending the wrong messages to children. It makes sense that if the "wrong" messages can be sent then the possibility of sending the "right" prosocial messages is also within

the potential influence of the medium. Chambers and Ascione (1986) define prosocial behavior as behavior that benefits another individual at some cost to the individual performing the behavior; examples include helping and sharing. Apparently the concerns of the opponents on this issue have caused their state legislative policy makers to call for extensive discussion before the project should proceed (Minnesota State Lottery, 1991).

Videogames are another medium in the multimedia mix of entertainment and communication devices. A greater effort must be made to provide videogame programming that will better serve the needs of our society. The researcher hopes to shed some light on the feasibility of videogames being used as a tool in the socialization process of children rather than just another high-tech toy that merely keeps them entertained and occupied. A review of the past and current literature on the effects of television and videogames coupled with new research based on survey questions distributed to group of parents and children should accomplish this.

Some home videogames feature a lively sequence of events that must be learned in order to reach desired goals. "Super Mario Brothers" is a game popular with children that provides obstacles and pitfalls that the

player must overcome. Built-in shortcuts aid in goal completion. The game features a sequence of game screens that increase in levels of difficulty as the previous sequence is completed. Super Mario Brothers can be considered a prosocial game because the game character, which is controlled by the player, must rescue another game character in order to win the game. Games like Super Mario Brothers can be used as models for programming games that will provide the child user with skills for self-help and an informational base to confront certain societal problems.

Many of the goals of parenting are accomplished through repetition and rewarding correct behavior. Correct behavior in many instances means making correct decisions. Videogames, even those with prosocial content, can reward the user with an array of whistles and bells, more play time, and with a sense of accomplishment. Videogames can also demonstrate that making the correct choice is the avenue to reward, recognition, and a sense of accomplishment. The eye/hand coordination and problem solving techniques that children exhibit playing videogames are skills worthy of acknowledgment and they also may benefit them later in life. Many adults would be trounced if they tried to match or keep pace with the videogame playing skills of most children. It would seem to make sense

that parents should consider videogames as a tool that could facilitate some of their parental goals.

Purpose of the Study

The purpose of this study is to investigate the feasibility of using home videogames as a self-help tool for children. Computer games are no stranger to educational and training specialists. Electronic self-help programs in the form of prosocial computer games are being used to enrich young people's intellectual and behavioral development. This study is being undertaken to see if its feasible to apply the same knowledge and techniques to the development of mass produced home videogames with the intended goal of aiding in the social development of children. This researcher believes there is an existing infrastructure already in place in most American households that could facilitate the benefits of computer-based training. Consider what there is to work with. The technology exists, and the fundamental theories of education and behavioral modification and their effects are well documented in the appropriate journals. Many young people today have the time and a strong desire to play videogames. If we take that desire to play videogames and direct it towards videogame play that employs the

simulated completion of self-help skills, we have a situation where positive thematic input is repeated and reinforced.

Predetermined goals embedded in the games would focus on self-help and problem-solving skills; examples include making simple meals or snacks, practicing good hygiene, and picking up after themselves. Self-help skills for varying age groups could cover a broad range of life coping skills such as safety issues. Problem-solving skills would help users increase their ability to make intelligent decisions. The reward can be the familiar array of whistles and bells and extended game play. Videogames that are programmed to entertain and challenge, as well as reinforce some of the skills and behaviors parents want their children to exhibit would be an additional tool in the educational and socialization process. It would be very beneficial if parents and children were consulted in any preliminary videogame designs because their intuitive skills and opinions most certainly will contain valuable insights that could advance the usefulness of home videogames.

As a parent, I have some very concrete ideas about the traits I would like my children to exhibit. There are times in my household where my wife and I are both working. We want our children to be self-reliant when they are faced with this situation. We enjoy playing

with our children, and more time can be spent playing with them and displaying affection towards them if they have the informational base to take care of some of their own basic needs. We are fortunate that we are a two-parent household, but this not the situation for many American households.

The single-parent household often is faced with task of childrearing without the resources that could greatly benefit the children. Being raised in a single parent household could bring about deprivations in many areas. It will suffice to say that some of the deprivations could be due to economic factors, but some of them could be caused by not being informed of what is expected. No child chooses to be embarrassed, left out, or placed in harms way because they did not acquire the social skills or information base to confront the world around them. Perhaps videogames that have as their purpose educating and facilitating behavioral change could accomplish this. There is no doubt this is already happening for those who can afford more expensive home computers and their accompanying games.

Providing educational and prosocial programs for home computers does little to help economically strapped families who may have many of the same goals in childrearing as the more affluent. The forum for

addressing the disadvantaged, especially children, is any means available. Videogame terminals are low-end computers that are more affordable for lower income families. This researcher wanted to determine if it was practical and advantageous to provide more prosocial games for home videogame terminals.

Although many family situations have been altered by economic and social forces, parents still want to see their children grow into adults with values and skills that will enhance their adult lives. In our modern society, technology is playing an ever increasing role as a socializing agent. It is up to adults to insure that the impact of technology on children is positive. Experts continue to argue the effects of television and now videogames. There are some aspects of television viewing that are very positive for young viewers.

Bandura and Walters (1963) state that mass media are a source for symbolic models that have the potential to further the goals of parents. They also believe that careful consideration about the content of children's mass media can greatly benefit both children and parents. Although videogames were not in the mass media mix when they made their assertions, the idea that positive, constructive content will prove beneficial holds true today. Lesser (1974) indicates

that children will learn attitudes such as kindness and altruism if presented with the proper models or modeling technique.

In order to determine the feasibility of the medium, a review of the related literature in chapter two will address television and family life, the effects of television and videogames, and gaming and simulation. The American family and its relationship with television requires ongoing research to see how entrenched this medium is becoming in the household. The proliferation of videogames and their effects should also be the subject of on-going study.

Past studies on the effects of television and videogames, have yielded various results. Simply put, they can either have no effect on behavior or they can elicit some form of behavioral change. Some layman, parents and non-parents alike, believe there is noticeable change. The experience of this researcher supports the belief that there can be behavioral changes associated with television and videogames. The literature bears this out. Again to simplify, these changes can be good or bad and short or long term. The content of television programs and videogames and their salient features are only partly responsible for any perceived effects. A better understanding of the elements that motivate people to engage in videogame

playing may aid in developing games with more learning potential.

Gaming and simulation techniques have proved that learning can take place from play activities. Borrowing some of these techniques and applying them to home videogames would also be useful in the development of games whose purpose is to create a learning tool in a play environment. Currently most videogames designed for learning are in the minority being greatly outnumbered by entertainment games.

In order to determine the feasibility of using home videogames as a self-help tool for children, this researcher constructed a survey instrument designed to find out how parents and children perceived home computers and videogames. Would parents be interested in using videogames as tools for learning? A total of eight questions were asked of the parents. A separate survey was distributed to the children who participated in this study. Their questions were concerned with the amount of use and most liked features of their favorite videogames.

This researcher believes that home videogames can be developed to aid in the socialization of children. This would benefit the parent as well as the child. Millions of children have been thrust in front of the television since its availability to the masses.

Television has yet to realize its perceived educational value. While the argument continues about television's perceived effect, people are continuing to make it a major part of their life experience.

Home video games are also becoming widely accepted entertainment device for the American family. Videogames designed for home computers are indeed an accepted tool for education. The benefits of these games are only available to those who can afford them. Low-end computers in the form of home videogame terminals could be utilized to provide many of the advantages in learning those with more expensive computers realize. This researcher believes there is an infrastructure in place in the form of home videogame terminals that could feasibly aid in the socialization and education of children in many different American homes.

Chapter two will be a review of the related literature that are in the areas of television and family life, the effects of television and videogames, and gaming and simulation. As television changes in form and function in the American family its potential increases as a learning and socializing agent. By on-going study of the effects of television and videogames we may be able to discover certain similarities that could benefit both media and the user. The application

of gaming and simulation techniques to computer and a limited number of home videogames has indicated to this researcher that it is feasible to believe home videogames could be an effective tool for socialization and education of children. Programs developed for the home videogame format could potentially reach a high number of diversified families.

Chapter three will provide some background as to why this researcher decided to undertake this study. It will also explain the procedure undertaken to ascertain if it would be feasible to use home videogames as an agent in the socialization of children. A survey instrument was constructed to find out about the attitudes parents and children have about computers and home videogames.

Chapters four and five address the parents' and children's responses to the survey, and provides a summation that the researcher believes supports the feasibility of using home videogames self-help tool for children.

CHAPTER II

REVIEW OF RELATED LITERATURE

Television and Family Life

Television is an integral part of the American household. In 1950 only about 5% of American households had a television set. By 1960 that figure rose to about 90%, and by the early 1980s almost all homes had at least one television set (Condry & Kieth, 1983). Television became an intricate member of the American family by fulfilling various family members entertainment needs. Figures from Nielsen Media Research indicate that during the 1992-93 television season point out that children from the ages of 2 to 11 spend over three hours a day watching television (McGill, 1994). From the time children are very young until the time they pass through elementary school, television viewing time steadily increases. Eventually more time is spent with television than in school or communicating with parents (Singer, 1983). During this time, some form of learning and socialization is taking

place. This replaces and redefines the socializing and learning that, in the past, children acquired by interacting with their peers or their parents.

Television is a very large part of American family life. We have accepted it as a member of the family. It can function as an entertainer, an educator, a companion, and a babysitter. Television has great utility and service in part because parents know where their children are when the children are watching television. We start our children out very young in their relationship with television. Lesser (1974) claimed that children of preschool age and up to the age of six are the heaviest television viewing audience in America. More recent figures, however, show that adults are watching more television than children (McGill, 1994). The viewing habits of adults provide a model for the children that share their environments.

Mother and fathers may come and go in the American family, but the television is almost always certain to be there. It is a non-threatening companion for children, and it will always be there for them on demand. The level of involvement families have with television may lead one to believe it is a well documented relationship. This is hardly the case.

Only twenty-two articles pertaining to television have appeared in the National Council on Family

Relations journals since 1950 of which eight focused on the effects of television, two focused on content analyses, and twelve focused on how television was used (Christopher, Fabes, & Wilson, 1989). It is the opinion of these researchers that family relation experts have directed little attention to the heavy use of television even though television has been playing a major role in the socialization of children. Singer (1983) indicates we can recognize the political ramifications of television and its influence on adults based on the vast amounts of money spent by candidates running for office. Given the amount of time children spend viewing television, it would seem appropriate that television has the inclination for being a socializing agent.

Good (1964) defines socialization as a process by which we acquire the values and knowledge of our group and how we learn the social roles appropriate to our position in it. Three arguments commonly used to dispute television as a socializing agent are: most of television is fantasy, the experiences presented are too removed from everyday life, and television is non-interactive (Dorr, 1985). Although these may be valid arguments about the nature of television, they do not alter the fact that television is a learning resource. Dorr also says many viewers understand that

television programs are primarily created for entertainment, but many report they watch television specifically to give them ideas and consider the content informative.

Many television programs provide the child and the parent with models on how to handle a variety of social situations in responsible ways. For example, the former "Cosby Show" guided viewers through some of the typical conflicts that confront many families. The "Cosby" parents and children reach solutions without resorting to domestic violence or screaming matches. More contemporary programs such as "Roseanne" do the same thing today, while addressing more contemporary topics.

Television provides children with role models whose range of emotional experiences and emotional responses vary from the mild to the extreme. Like parents or peer groups, television is a rich resource for observational learning. In observational learning, the actions or responses of a real-life or simulated models are imitated by the observer. Parents need to consider the possibility that children learn how to behave in, and think about, social situations and roles from the characters who appear on television (Christopher, Fabes, & Wilson, 1989). Imitation of behavior presented by television characters can be

clearly demonstrated by an episode of the once popular show "Happy Days." When the character, the "Fonz," took out a library card in one episode of the program there was a five-fold increase in the number of children applying for library cards in the United States the next day (Greenfield, 1984).

Parents who are concerned about the effects of television on their children may find it more necessary to assume a more responsible role in determining program selection and limit how long their children view television. Heavy viewing, especially of violent programming, warrants concern because, as much of the research from the past decade indicates, such viewing tends to increase aggressiveness (Rubinstein, 1983). Parents can select less violent prosocial television programming and limit the viewing time of children to combat the negative effects of violent programming. This approach is realistic for some families, but what are the alternatives for children who are home alone while the parent or parents are working?

In situations where the parent or parents are forced to spend more time out of the home because of economic factors or because of dysfunctional family dynamics, television is often the substitute for the missing parent or parents. The reduction in the amount of time parents spend with their children reduces the

overall opportunities parents have to provide themselves as role models. Television then becomes a stronger influence in the shaping of children's behavior.

Childrearing practices can differ according to the family environment. Douvan (1963) and Propper (1972) concluded that parental expectations of children are greater when both parents are employed outside the home, particularly with respect to those aspects of home maintenance and self-maintenance for which children are held responsible. There is a need to teach children self-help techniques and direct them towards independence and, at the same time, provide them with love and emotional support. Do parents have the time and energy to perform all these functions when they return home from work? Can parents provide the emotional support children need and teach them how to be more independent in the decreased time they have to interact with them? The linking of computers and television can be utilized for some of these tasks. An interactive system employing the television would provide another means to teach or reinforce a broad range of safety and self-help skills for children. Instead of the television serving as a babysitter, it could function as a skills teaching device.

Television and home videogame terminals could be used as a tool that would reinforce attributes that parents would like to see their children display. Critics such as Mander (1978) and Postman (1985) warn us that the use of television as a learning device has irredeemable consequences. We are warned that television is becoming more dominant than the printed word. Since television is primarily a source of entertainment, the discourse on such topics as education, news, religion, and politics are steadily taking on the form of entertainment.

Television may be changing in form, but it is also changing in function. It is no longer the one-way medium it used to be in the past. Home videogames have made television interactive and transcended its use and potential in the American household. We have the opportunity to turn the passive activity of viewing television into a fun-filled learning experience for children. Content could be produced that would be more representative of parental objectives. By studying and understanding the interactive nature of television coupled with the computer, we may find it possible to design videogames that will increase the prosocial applications of both media. If television is indeed a member of the family, it must be called upon to perform

more interactive and positive functions that will enhance and better our way of life.

The Effects of Television and Videogames

In 1982 the National Institute of Mental Health (NIMH) published a ten-year assessment beginning in 1972 of the scientific literature concerning television. Emphasis was placed on entertainment television and the report resulted in the following statement:

> Television can no longer be considered as a casual part of daily life, as an electronic toy. Research findings have long since destroyed the illusion that television is merely innocuous entertainment. While the learning it provides is mainly incidental rather than direct and formal, it is a significant part of the total acculturation process. (NIMH, 1982, p. 87).

Certainly experience continues to bear out this conclusion. A great number of television programs deal with the theme of good forces in a struggle with evil forces. Violence is frequently the device that is used to resolve the conflict. Huston and Wright (1983) indicate producers, advertisers, and broadcasters make ample use of violence in children's programming because they believe the dramatic conflicts involving anger, aggression, threat, and conquest are necessary to attract and hold the attention of child audiences.

According to Rubinstein (1983), industry spokespersons assert that their programs are fundamentally prosocial because good ultimately triumphs over evil. Nobody can argue against good over evil, but it is a shallow argument for the excessive use of violence. Children may be learning that conflict is best resolved through violent means. Fortunately the action drama, sitcoms, and soaps of today are paying more attention to prosocial content. Many of the leading characters in these programs do not smoke. The trend is to show more interest in a healthy lifestyle (Zillmann, Bryant, & Huston, 1994). Violence is still, however, a very apparent means of resolving conflict.

Imitation is an important influence in the acquisition of deviant or conforming behavior and is accomplished by observational learning or role modeling. In modeling techniques the learner observes a real-life model behaving in a certain way, or a symbolic representation of the behavior to be acquired is presented to the learner (Bandura, 1963). Bandura also points out that much learning in North American society is accomplished through the use of real-life models, but advances in technology are placing more reliance on the use of symbolic models. He also contends that the amount of time children spend watching television is a strong influence on modifying

and shaping their behavior which results in parents becoming relatively less influential as role models.

Experts have presented findings that links television viewed violence to aggressive behavior. Rubinstein (1983) states in a summary of research conclusions from the 1982 NIMH report:

> Granted that the data are complex, and that no single study unequivocally documents the connection between televised violence and later aggressive behavior, the convergence of evidence from many studies is overwhelming and was so interpreted in the NIMH report. . . . This major research finding of the NIMH report regarding the linkage of televised violence to later aggressive behavior clearly represents the position of the great majority of scientists working in this field. (p. 821)

There are also many positive influences associated with television, and the selection of educational and responsible prosocial programming can benefit children. Laboratory and field studies have consistently shown that such behaviors as cooperation, friendliness, delay of gratification, and generosity in children can be enhanced by appropriate television programming (Rubenstein, 1983). Parents have to learn how to make the medium work for them. Network television does

provide programming for the younger audience, but it is predominantly for the purpose of entertainment and its prosocial content is questionable. As Dorr (1985) points out, entertainment programming yields higher profits than informational programming. The paid-for cable system is another source of channels designed especially for children. Cable television may be unavailable for some families because of the cost, and it may not be available at all in some areas. Broadcast television also provides a channel for a public broadcasting station. Children's shows like "3-2-1 Contact" and "Sesame Street," which are produced by the Children's Television Workshop and are aired on the public broadcasting channel, are designed to be educational and are very popular with the young television audience.

In contrast to commercial television Huston and Wright (1983) find that educational programs have considerably lower levels of pacing, frenetic activity, loud music, and sound effects than commercial programs for children. The producers of the Children's Television Workshop realized these were the missing elements in programs designed to send intended messages designed for a younger audience.

The success of programs like "3-2-1 Contact" and "Sesame Street" have been attributed to techniques

borrowed from commercial television and techniques unique to themselves. Prior to producing "Sesame Street," those involved researched existing programs to determine the television preferences of children. The producers discovered that a young viewer's attention would not be diverted to an educational program just by good intentions (Lesser, 1974). Any morning cartoon show will demonstrate fast pacing, unusual voices, and wide array of animal characters. The fast action of many visual and sound effects keep children glued to the screen. The programs produced by the Children's Television Workshop demonstrate that children can be informed and entertained at the same time. The salient and formal features of the medium can be manipulated to yield positive effects.

Home videogames are a widely available form of home entertainment. There are several videogame systems to choose from and hundreds of game programs to play on them. Home videogames are changing the way children relate to television. They are now interacting with this new medium instead of passively watching it. Many children now have at their disposal a sophisticated electronic companion that will react to them. Children are no longer stuck in the role of an observer without the possibility of influencing the scenarios presented by the medium.

Early videogames were fascinating to the American public despite their limited graphics and simplistic game play. Pong and Space Invaders were very popular games in the mid 1970s. The rapidly falling prices of computer-related products made these first computer games widely available to the public (Loftus & Loftus, 1983). Now the only place you can find these game terminals or game cartridges is at a second-hand store along side the eight-track tape cartridges. The new generation of videogames have advanced to the point where they are very challenging. Today's technology has created graphics of amazing definition, realistic sound effects and a wide variety of game environments to suit all age groups. The television has once again become an entertainment center that family members are interacting with while they are interacting with each other. For example, many home videogames are sports oriented and offer head-to-head competition. There are many manufacturers of videogame software and hundreds of games to choose from.

Unfortunately, most of the programs being developed for home videogames seem to be taking the same path as television programming. Videogames seemingly are echoing what Huston and Wright (1983) identified as dramatic conflicts in television programming. In the name of entertainment, the forces

of good and evil are again engaged in a struggle. Violence is, once again, the deciding factor that determines who will come out on top. The premise of dramatic conflict involving violent themes as a means to grab and hold the attention of videogame players may prove to be false due to the interactive nature of the medium. Malone (1983) identifies challenge, fantasy, and curiosity as the intrinsic elements in videogames that motivates players to use them. Making use of these intrinsic elements that motivate players, and programming prosocial content could have the net effect of a positive learning experience.

Condry and Keith (1983) assert that the direct effects of videogames depend on their content and the same inferences about violent television programming can be applied to videogames. The interesting twist is the viewer no longer takes a passive role in the scenario. The viewer becomes one of the characters in the plot. The game character which is under direct control of the videogame player, shoots, kicks, punches, or bombs the adversary till victory or defeat is attained. Nintendo of America Inc. (1990) offered only eight education oriented programs out of over 300 game choices. The American consumer is provided with another medium that has the ability to entertain and educate our children, but the potential to educate,

once again, is overshadowed by the profitable lures of entertainment, which is more and more defined in terms of violence, aggression, and gender stereotyping.

Videogame playing is fostering the same concerns parents and critics have had with television viewing. According to Creasey and Myers (1986):

> The introduction of videogames, both in homes and commercial arcades, has met with mixed reviews. Critics fear that, besides being a costly habit, the games may also take time away from more valuable activities. Industry advocates claim the games may improve hand-eye coordination and may be a first step in introducing children to computer technology. (p. 252)

Loftus and Loftus (1983) report on the effects of videogame playing on the cognitive systems and how such stimulation prepares videogame players to be better problem solvers. Loftus and Loftus suggest simplifying problem solving by breaking problems down into three states; the original state, the goal state, and the rules, which are the restrictions that one must adhere to as they move from the original state to the goal state. Skillful problem-solvers plan and breakdown problems into subproblems and concentrate on trying to solve those subproblems. Working through each of the subproblems gets one closer to the ultimate goal which

reduces the difference between the original state and the goal state. The cognitive abilities of videogame players are stimulated, and problem solving within the game sequence becomes easier with repetition.

The combination of cognitive components can form the basis of strategies that accomplish particular goals. As videogame players begin to play a game, they are functioning with their sensory memory which provides a separate memory for each of the five senses; sight, hearing, touch, smell, and taste. Each sensory memory has a large storage capacity for holding information, but this information does not stay around for long. For example, the information entering the visual modality lasts about a quarter of a second. In this amount of time the information is either transferred to the next storage area of the cognitive system or it decays and is lost Loftus & Loftus, (1983). In spite of all the distractions presented in a videogame, the players skillfully select what is relevant for goal completion and disregard the rest.

The attention abilities of the cognitive system filter out the needed information and transfer that information to the cognitive system component known as short-term memory. The short-term memory has a relatively small capacity and can only hold about seven items at a time which if not acted upon can generally

be forgotten after fifteen to twenty seconds. This forgetting process can be prevented by rehearsal. By rehearsing information it can be kept in short-term memory indefinitely. If through rehearsal a person maintains a lot of information in short term memory, there is less capacity left to do other things such as planning strategies and focusing attention. So rather than keeping the short term memory near full to capacity, information is transferred to the cognitive system component of long term memory. The efficiency of entering information into long term memory can be improved with elaboration techniques. This is done by forming mental images of what is needed to be remembered and associating what is to be remembered with things that are already known. The storage capacity of this cognitive system component is virtually unlimited. Information from long term memory can be forgotten, but the forgetting is relatively slow Loftus & Loftus (1983).

Videogames may appear to some opponents as a wasteful and mindless activity, but in reality they are a challenging exercise of the cognitive process. Unfortunately, most videogames have followed the path of most television programming in the sense that the programs are often violent in their orientation. Even the earliest videogames were designed with a final goal

to destroy some computer-generated adversary. Yet even in this limited approach to videogaming the dynamics of the mind are being stimulated, which in itself is a positive effect. Greenfield (1984) asserts that the damaging effects that are perceived to come from electronic media are not intrinsic to the media but arise from the way the media are used. Among the many uses of videogames Buckalew and Buckalew (1983) observed that the promise to allow free time for videogame play worked better as a reward contingency than traditional rewards in the classroom for the behavior management/modification of exceptional children with emotional problems. In separate studies of young people and their involvement with videogames Dominick (1984), Egli and Meyers (1984) and Ellis (1984) found little support in the notion that videogame play is related to poor school performance. Ellis also concluded that the small percentage of subjects who displayed deviate behavior or reported poor school performance had weak parental control.

A big concern raised by the former United States Surgeon General Dr. C. Everett Koop is the danger that videogames might be hazardous to the health of young people and may cause adverse mental and physical effects ("Surgeon General", 1982). Gibb, Bailey, Lambirth and Wilson (1983) investigated 280 videogame

users and found no evidence that the games encourage social isolation, anger, antisocial behavior and compulsivity. The fear of young people becoming aggressive after playing violent or aggressive oriented videogames was not supported in a study completed by Winkle, Novak, and Hopson (1987), and similar findings were reported by Graybill, Strawniak, Hunter, and O'Leary (1987). Graybill, Strawniak, Hunter, and O'Leary (1987), conclude that there are no powerful short-term effects of playing video games with violent content.

Conversely, Cooper and Mackie (1986) observed 9-10 year old girls and boys during play, after playing and watching aggressive video games, and noted a significant increase in the girl's aggressive activity while the boys prior aggressive tendencies remained unaffected. The results of two experiments conducted by Anderson and Ford (1986) concluded that playing videogames that are aggressive in content can lead to negative short-term effects on the players' emotional state. Some of the subjects of their study demonstrated increased levels of hostility and anxiety. The data collected by Dominick (1984) recognizes that videogames are not the "menace" claimed by some critics nor are videogames devoid of some possible negative effects. Authors Greenfield (1984) and Loftus and

Loftus (1983) do not see videogames as wholely negative, but rather they see them as ways of developing cognitive skills.

In a study conducted by Malouf, Post-Gorden, Rodasta, and Schutte (1988) of the University of Southern Colorado, thirty-one children with a range in age from five to seven years were observed after playing both non-aggressive and aggressive videogames. The results of their findings indicate that young children take on the behavior of the character in the videogame that they played. The children were randomly assigned to play either a violent or non-violent videogame, and then they were placed in a room with toys that were similar to the characters in the videogame. Their behavior was observed and their level of activity was recorded. There was evidence that playing a videogame tends to lead to subsequent behavior similar to that of the character the individual controlled while playing the game.

The violent game featured characters who kicked and punched each other through out the game. The children who played the violent game were more aggressive afterward than the children who played the non-violent game. The non-violent game consisted of a character that would swing on a jungle vine to reach its destination. In summary, the children who played

the violent game displayed aggression in both their actions and verbalizations while the children who played the nonviolent game displayed behavior similar to that game. These findings led Malouf et al. to conclude:

> It seems reasonable that a child who has just witnessed a certain prosocial behavior in a videogame, who has taken on in the game the role of a positive character, and who has been rewarded for showing that positive behavior will be more likely to show that behavior if given the opportunity (p. 459)

Very little mention about the damaging affects of television or computers stems from their use as educational or informational devices. It is the use of these media as entertainment devices that causes parents, educators and researchers concern about their damaging effects. When videogames are used for education, they become tools as opposed to being entertaining toys. Malone (1981) defines tools as systems used as a means to achieve external goals and toys as systems used for their own sake with no external goals. According to Malone's definition, the majority of todays videogames fall into the category of toys whose primary purpose is entertainment.

The production and distribution of entertainment programming is proving to be highly profitable for videogames as it was for television. In order for television to attract more profits, devices such as dramatic conflict (Huston & Wright, 1983) and technical events (Mander, 1978) are used extensively to capture and hold the attention of the viewer. Mander defines a technical event as any alteration in natural imagery. Perhaps it is the cartoon quality of videogames that has led to their profound appeal among children.

The ability to entertain has brought about the wide spread use of home videogames. The marriage between videogame systems and television has placed computer technology within the grasp of people from nearly all socioeconomic classes. For many children the only opportunity they have to use computers is in school. Low income families may not be able to afford a home computer, but many may be able to provide their children with a home videogame system. The cost of a home videogame system is under a hundred dollars and game cartridges can range from twenty five to fifty dollars. There are also many video movie rental outlets that rent home videogames for two dollars or less a night.

Parents have an opportunity to choose games that will benefit their children. Instead of the television

controlling the activities of the child, the child can master the activity of playing videogames and learn that he or she is in control of the technology. There is a need to design more videogames that will serve children's needs. Prosocial videogames would employ the elements that children find as challenging and as entertaining in their favorite videogames. These elements should be identified and applied to videogame development, just as educational television borrowed certain elements from children's commercial programming. Mehrabian and Wixen (1986) suggest that educational videogames can be programmed to provide the user with more stimuli and control in order to raise the attractiveness of the educational material being presented. Raising the attractiveness of videogames could broaden the scope of their use.

Videogames have the potential to serve as simulated models in the process of observational learning. The content and form of videogames should be exploited to produce instructional self-help and life coping skills programs for children and people of all ages. Papert (1980) states that the holding power and the psychological impact of television could be increased by the computer in two ways: by designing the content for specific viewers, and by making television interactive. Home videogame terminals have

accomplished both tasks. Loftus and Loftus (1983) and Lepper (1985) state that videogames have at least the same potential for being a socializing agent in our society as cars, television, air travel, and mainframe computers. Videogames, due to their interactive nature, may be more of an influence than Television. A study by Selnow (1984) suggests that videogames fill a need for companionship in heavy users and, therefore, play a role in their socialization. Papert (1980) points out, "there is a world of difference between what computers will do and what society will choose them to do" (p. 5). Videogames are after all computer programs.

The prominence of videogames in our society has turned the efforts of some researchers to develop more useful games. Chaffin, Maxwell, and Thompson (1982) identified several motivating factors in videogames and developed six educational games based on the videogame format and marketed under the trade name of Arcademic Skillbuilders. The games were designed after systematically observing and interviewing videogame players and after hours of personal experience with videogames. The motivational features given primary consideration in the development of the Arcademic games were feedback, improvement, high response rates and an unlimited ceiling of performance. By the use of

feedback the player knows instantly whether their responses were too late, too early, correct or incorrect. Feedback is usually presented in visual and/or audible form. Players are not provided with the reasons why their responses are incorrect but are left to deduce them through observation.

Player improvement comes from familiarity and strategy. Familiarity comes from repeated game playing which leads to an understanding of the nature and content of the game. The player learns the consequences of his or her various responses and begins to recognize certain game sequences and consistent patterns. Overall strategy improves as they begin to anticipate events and take courses of action that would increase their number of correct responses. High response rates are due to the fast pace at which videogames present information. Several hundred responses may be required during the playing of a videogame. The player must parallel process information in order to successfully complete the game and a break in concentration can mean a lower score. Playing the game requires the player's full attention because there is no time for distracting thoughts. An unlimited ceiling of performance is achieved due to the built in rise in levels of difficulty in videogames. This allows players to improve their skills such as

information processing and coordination and response times. As these skills increase, game players can employ more effective gaming strategies and maintain further interest in the game. Malone (1983) suggests challenge, fantasy and curiosity are the necessary characteristics that make instructional game environments interesting. He found that games with obvious goals were rated the most popular in a survey of students. People will be challenged if a program or game has a variable degree of difficulty and if the outcome is uncertain.

The level of difficulty can be determined by the player's skill level, determined automatically, or selected by the player. Uncertainty can be added to a game by hiding information or adding randomness to a game. Goals and challenges are captivating to people because their self-esteem is engaged. Malone (1983) contends that success in any challenging activity will make people feel better about themselves, but cautions that failure, if severe enough, will prevent the desire to repeat the activity. He suggests that feedback on performance should be constructed so it minimizes any damaging effects to a person's self-esteem. Fantasies can make learning fun and aid the learner by applying old knowledge in understanding new things through the use of analogies and metaphors. They also can provoke

vivid images related to the material being learned and may help the user remember the material. Curiosity motivates instructional environments by providing an optimal level of information which is neither too complex or too simple. Sensory curiosity focuses on the changes of light, sound or other sensory stimuli in the environment. In videogames this is accomplished with music and animation and other audio and visual effects. The effects can be used as decoration, to enhance the fantasy, as a reward or as a representation system. Malone (1981) states that an activity is intrinsically motivating if people engage in the activity for its own sake. He also suggests if people are intrinsically motivated to learn something they may spend more time and effort learning, feel better about what they learn and use it more in the future.

An prosocial videogame can be a shared experience between the child and the parent which they both could enjoy. Discussion between an adult and child during or after playing a prosocial videogame would reinforce the modeled/simulated behavior. Learning can be facilitated by the interactivity of the medium and by the sequencing of material in small increments that increase in levels of difficulty. There should be a clear reinforcement/reward for the proper responses

along with the opportunity to correct wrong responses or course of action.

For the present it seems that videogames are here to stay. The rising level of their sophistication and the increased abilities of the user should be met with more meaningful program content. One way to accomplish this would be to borrow from gaming and simulation techniques.

Gaming and Simulation

Compared to most videogames which can provide some form of indirect learning and have an entertainment orientation, the primary purpose of simulation games is to teach a particular behavior or skill. Games and simulation exercises afford a person the opportunity to encounter life experiences symbolically through the use of play theory while they are free of any potential damaging effects from real world environments or experiences (Silvern, 1986). Learning through simulation is founded in the theory that learning can be increased and heightened when based on experiences that are fun, entertaining and gamelike. Crookall, Martin, Saunders, and Coote (1986) group simulation exercises into three distinct modes: manual, machine, and manual-machine simulation. There is no computer involvement in manual simulation, as found with board games and role playing.

Resnick (1986) who converted a manual simulation to a manual-machine simulation lists certain drawbacks associated with manual simulation. These drawbacks include the paper materials that bend, tear, or get lost easily. He also wishes to overcome the annoyances of shuffling and organizing the game pieces. Computerizing the game also aids in efficient score

keeping and data retrieval. An additional feature of this conversion of a manual simulation game to a manual-machine game is that it allows the data to be altered according to ethnicity, age, or the background of participants. Resnick sees this feature as a way to make the simulation more real and meaningful, and reduces the likelihood of the game becoming boring.

Machine simulations are run entirely on a computer where the model and data are all included in the computer program. Participants are on a one-to-one basis with the computer without the benefit of other participants or a facilitator to provide interaction and guidance. Machine simulations run the risk of being less effective than manual or manual-machine simulations if care is not taken to insure that the novelty of sound effects and graphics does not isolate the computer simulation participant so that they are cut off from social interaction. There is the possibility that the participant may be beating the game without fulfilling the learning objectives of the simulation. Unless machine simulations are carefully constructed, they can easily turn into entertainment and lose their effectiveness as a learning tool.

Manual-machine simulation games require some interaction between the participants and the computer with the decisions made by the participants affecting

the evolution of the simulation. Crookall et al. (1986) state, "the computer and its data are merely an operational aid to running a simulation, a springboard for interaction among participants" (p. 370). In the context of home videogames as a self-help tool for children, the parent or another adult could be another participant. They could assume the role of a facilitator by guiding the child through the game and/or providing debriefing after the game has been completed. This would greatly increase the learning potential of any videogame whose objective is to serve as a direct learning resource. The self-development of valuable life coping skills through simulation has the potential to be enhanced if parents, children, and videogames interact towards predetermined goals.

Farra (1980) defines self-development simulation games as games where the objective is to bring about personal behavioral change. Their usefulness is determined by the honesty, openness, and the intent with which they are played. What must be kept in mind is the necessity for reinforcement, debriefing, and follow-up strategies to make simulation games most effective.

The range of simulation games can vary from the very simple to complex. Although a game may be seemingly easy to play, the player may be unaware of

the underlying complex dynamic features imbedded within the game. Simulation games may give the appearance of fun-filled play, but their more serious objective is learning.

Farra (1980) lists format, complexity, objectives, model validity, and learning effectiveness as some primary considerations in the selection of simulation games. The simulation game format would include aspects dealing with playing time, the number of players and the intended age level for which the game is designed. Many simulation exercises use board games, manuals and role playing as methods of teaching. More recent simulation exercises are relying on advances in computer technology to further their learning objectives.

Model validity refers to how well the simulation game reflects reality. Game content can represent a life experience that the player has had or will have in the future. A simulation game is considered to be effective if the player is encouraged to make an association between the game and the real world. Effectiveness is also determined by how long the material presented remains with the learner, and whether the learner is motivated to put what they learned into practice.

The way simulation objectives are achieved has varying impact on their success. Farra (1980) believes that the learning objectives are more effective when they are realized subtlety by the players. Objectives may be made specifically noticeable or be covertly hidden until a debriefing significantly details the objectives. Simulation objectives can be reinforced with follow-up material. Self-development simulation game objectives can be oriented towards achieving a particular skill, a single insight, or they can be designed to give the player a total growing experience.

The game of "Play Yourself Free" teaches the player insights into reality therapy and is intended for high school through adult learners (Farra, 1980). The game intends to teach the player that once he or she understands how the mind creates painful feelings, he or she can control the mind, and then be able to control the hurtful feelings. It is important that the playing of the game be structured in such a way as to not mask over or make the objectives irrelevant or ineffectual. An effective debriefing can counter these effects and reinforce the game's objective, which is to motivate the player into making a behavioral change.

Nawrocki and Winner (1983) report that the U.S. Army has shown keen interest in both the technology and motivational aspects of videogames. A U.S. Army study

of the commercial videogame Battle Zone led to the development of a modified version with better graphics display and better user control characteristics. The game was made available to a wide range of Army representatives to obtain feedback on the concept of using these games for training. The positive reaction warranted more study on user acceptability for similar games. The U.S. Navy also converted an existing training manual game on shipboard tactical exercises to automated play. Similar computer-based anti-submarine training games are being carried out by the British Navy. For tank gunnery training the U.S. Army is using a micro-processor based videodisc whose features include sound effects, individual scoring and visual feedback similar to those found in commercial videogames. Maybe sometime in the future, the most qualified candidates for military gunner's school will come from the ranks of the expert videogame players. The entertainment value of videogames is certainly embraced by young people. Perhaps videogames with educational and training objectives will reach the same levels acceptance.

Paperny and Starn (1989) state, "the computer is now accepted by teenagers as standard educational equipment" (p. 750). Results of their research with program specific games indicate an increase of

knowledge and a change in attitudes in adolescents concerning the use of contraceptives and the costs and responsibilities of raising a family. Two computer games were developed to address the problem of teenage pregnancy. The "Baby Game" was designed to increase the players' awareness and knowledge of the costs in time and money involved in the process of childrearing. The "Romance Game" was designed to give a better understanding of the risks involved in engaging in sexual intercourse. A fairly even distribution of gender among the subjects, which numbered 718, ranged in age from 13 to 18 years. Their ethnic distribution was diverse as was their socioeconomic status.

After playing the game, the participants expressed that they could try different simulated scenarios without real life consequences. Trial and error learning in real life can be costly, time consuming, and injurious. The teenagers were not concerned about embarrassment when using game simulation as they might be if they had to interact with a teacher. The games were described as fun, informative, and educational and at the same time led to an increase in knowledge and attitude improvements in the areas of teenage pregnancy and contraceptive methods. It is significant that a high percentage of players would play the game again,

and that a high percentage would recommend the game to their peers.

The computer games were made available to six major pediatric clinics in 1986 and the result was a 15% overall decrease in adolescence pregnancy during their first year of use. In other words a prosocial game simulation proved its usefulness and effectiveness in a very significant area. The use of videogames can make easier the enormous task that parents, teachers, and health professionals face when they attempt to undo the misconceptions adolescents have about sex and pregnancy (Paperny & Starn, 1989).

Videogaming in the past was primarily used for entertainment. Although the earliest were very rudimentary, the public embraced their unique entertainment value. A handful educators, social, and computer scientists, however looked beyond the entertainment value of these games.

The first educational videogames were developed on computers in laboratories far removed from the average public. Gaming and simulation techniques were used being in conjunction with the with the benefits the computer could add. Simulations could be made to appear more real and meaningful. The previous physical annoyances in gaming exercises such as easily lost or damaged materials were eliminated. Collecting and

retrieving data were also greatly improved. Added player control reduced the chances that the games would become boring. Many of these games would be considered primitive by todays standards.

While scientific communities were debating, researching and developing computer and videogames, the public was awash in presence of this newest form of entertainment. Arcades were flourishing and bars, lobbies, and even bathrooms had videogames installed. After a three year surge of popularity the gaming public started to get bored with the videogames that were available.

A renewed interest was brought about when Nintendo of Japan developed a computer chip that improved every element of videogames. Research steadily continued in the scientific community about the effects and applications of videogames. Military researchers were looking at games meant for entertainment and adapting them to train military personnel. They have also taken many former training instruments and adapted them to the computer and videogame format. There appears to be no limit as to how computer and videogames can be utilized for the various and wide ranging tasks of educating and training.

CHAPTER III

METHODOLOGY

Background

This study was inspired by my three youngest children. Several years ago we purchased a Nintendo home videogame system for them. As a result television viewing and the way our children were relating to one another changed very quickly in our household. In a short time the battle of what program to watch took a hiatus. It was great to see our children and other young people so cooperative and like-minded in their entertainment selection. My visits to the game room went mostly unnoticed at first. Their full attention was on the game screen. Only a more experienced player with information that would lead to better scores could disrupt the flow of electrons. As a parent I was experiencing a rare event in child dynamics.

Boys and girls were cooperating with each other. The older children were sharing their knowledge and skills with the younger ones. More observation revealed that the younger children were sharing information with the older ones. Preschoolers were somehow keeping track of the beeps and noises that

meant things I could not even begin to understand. When I was given the opportunity to play, I was trounced. Everyone in the game room was willing to help me improve my technique once the laughing died down. I knew I was witness to something very special. Somehow the presence of this little computer and its interface with the television was creating a learning environment and fostering cooperation and sharing. Was it possible that a computer-mediated environment could bring about behavioral change? Could a child's videogame be embedded with prosocial content that would affect lasting behavioral change?

Major technological developments and their implementation bring about sociological changes. Automobiles and televisions, for example, have created change for nearly every culture on our planet. New technologies along with ideas about their use are constantly being introduced, and it takes time to see how they effect personality development and personal relationships between people and people and machines.

Many households now have at their disposal home videogame systems. I am not referring to personal home computers which can be too costly for lower income families to afford. Rather I am referring to the relatively inexpensive game terminals that utilize the television screen as a display device. Effective use

of this new computing medium can transform the time that a great number of children are spending alone into time that is spent learning valuable skills.

It is the purpose of this research to explore the feasibility of using home videogames as a self-help tool for children. First, a review of the literature addresses the nature of videogames and the possibilities of using them in ways other than entertainment. A videogame is a computer program that is run on a low-end computer whose primary function dictates its level of complexity. This does not suggest that its programs for entertainment and education lack sophistication. It only suggests that the hardware is less complex and therefore user friendly and more affordable for more households. This researcher believes this lower level of complexity, as compared with personal home computers, has created an infrastructure of low-end computer hardware that could take advantage of programs that were meant to be more didactic in their content.

Second, a survey was designed to provide information on both parents' and children's attitudes towards home videogames and certain aspects of their use. The motivating factors in videogames can be used to hold the interest of game players while trying to impart educational and prosocial messages. Malone

(1981 & 1983) suggests that the motivating factors for playing educational computer programs is founded in more than winning at the game. His guidelines for designing such games include challenge, fantasy, and player control. It is the goal of this study to determine the feasibility of using an existing infrastructure of low-end computers in the form of home videogame terminals as a self-help tool for children. The information provided by the survey instrument indicates that ownership of videogame terminals is in the majority of the households surveyed. A review of the related literature, which addresses the nature of videogames and their various uses, shows that the use of videogames is indeed feasible for educational and prosocial applications.

Procedure

In order to utilize home videogames as a self-help tool for children, the following questions will be addressed:

1. What are parents' attitudes toward computers?
2. What are parents' attitudes toward home videogames?
3. Do parents' perceive any learning or skill acquisition taking place while videogames are being played?

4. How do children feel about home videogames?
5. How often do children play home videogames?
6. Can a child absorb prosocial values from an electronic representation of said values?

In order to answer these questions, I reviewed the literature available on the effects of television and videogames, and gaming and simulation procedures. I also constructed a survey instrument consisting of questions that would lead me to discover some of the attitudes and the level of involvement children and parents have with videogames and computers (see appendices). The survey questions were developed from the readings and informal discussions the researcher had with other parents. For example, parents were asked whether they perceived any learning was being accomplished during videogame playing. They were also asked about their feelings towards computers and videogames. The survey instrument was also constructed to answer questions about the frequency at which home videogames were being used. Questions were also asked to uncover the elements children found most appealing in their favorite videogames.

The population of this study consisted of parents and children from both single-parent households and two-parent households. I located these families with the cooperation of a local elementary school principal

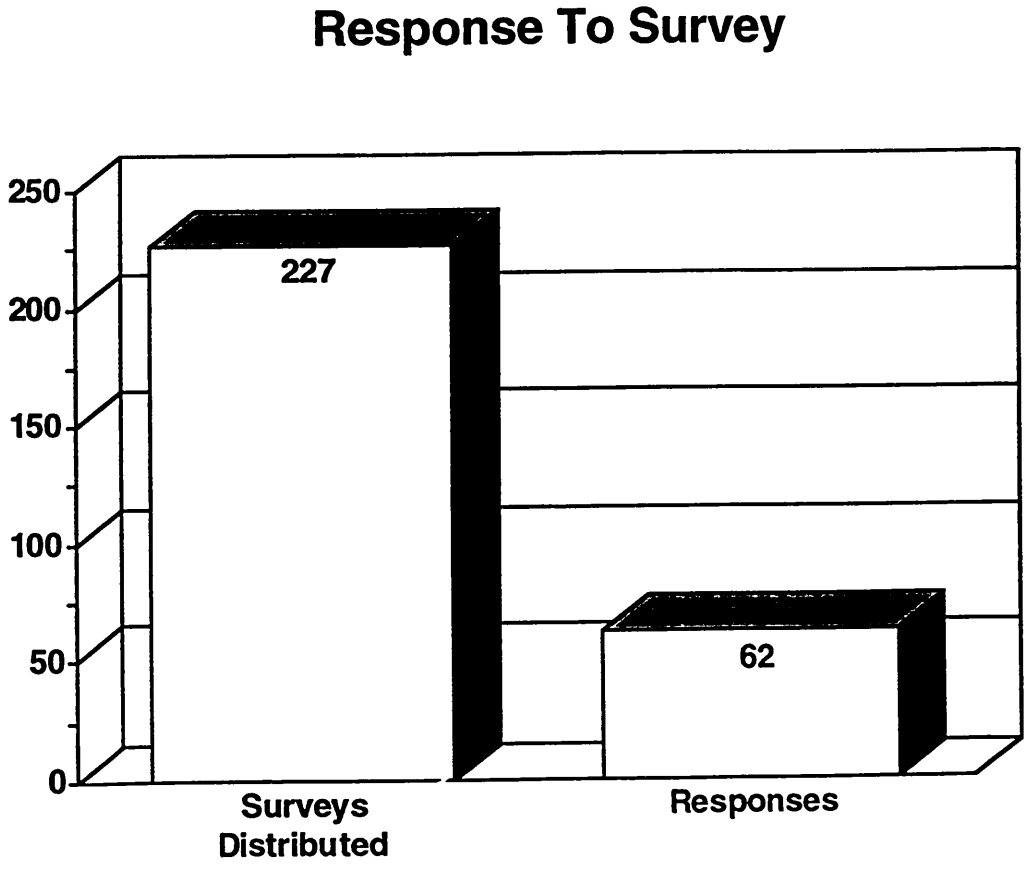
in Corning, New York. Our initial meeting was primarily an exchange of the goals of elementary education. One of those goals is to help socialize the young student body. I went on to explain briefly how videogames may be utilized to accomplish this task. The principal proved receptive and somewhat familiar with this concept. At our next meeting a brief but informative proposal and copy of the survey instrument were presented (see appendices). I was then interviewed and permission was granted to conduct the survey.

We reached an agreement and under its terms all the participants identities would remain anonymous. It was also agreed to that all data collected and a copy of this study would be made available for the principal.

I was able to administer the survey to a total of 227 students and 227 parents. The subjects were told that the survey was on a voluntary basis, and they could refuse to participate if they so desired. In order to eliminate as much bias or perceived bias as to whether anyone participated in the survey, the teacher left the room while the students deposited their responses in a envelope.

The total number of students represented grades one through five. The response rate was about 22%

which represented sixty-two students and sixty-two parents. T. Dunn (personal communication, January 5, 1996) of the Advertising Foundation of America which is based in New York, New York stated there is no average response rate to surveys. Mr. Dunn said the Advertising Foundation of America strives for a sixty percent return but fifty percent or lower is expected. He also said the public is becoming desensitized to surveys because of their widespread use and, this tends to lower response rates as time goes by. Perhaps this widespread use and that the researcher was dealing with young children, who were asked to participate on a voluntary basis, lowered the potential response rate.



I provided enough questionnaires to the principal that were to be completed by the individual children and by one of their parents. The surveys were distributed to the various teachers who in turn passed them out to the children in their classes. The surveys were passed out on a Friday and collected on the following Monday. The researcher assumed that having the weekend to answer the questions would induce a more reflective approach to completing the survey. Findings from this survey will be discussed in more detail in the next chapter.

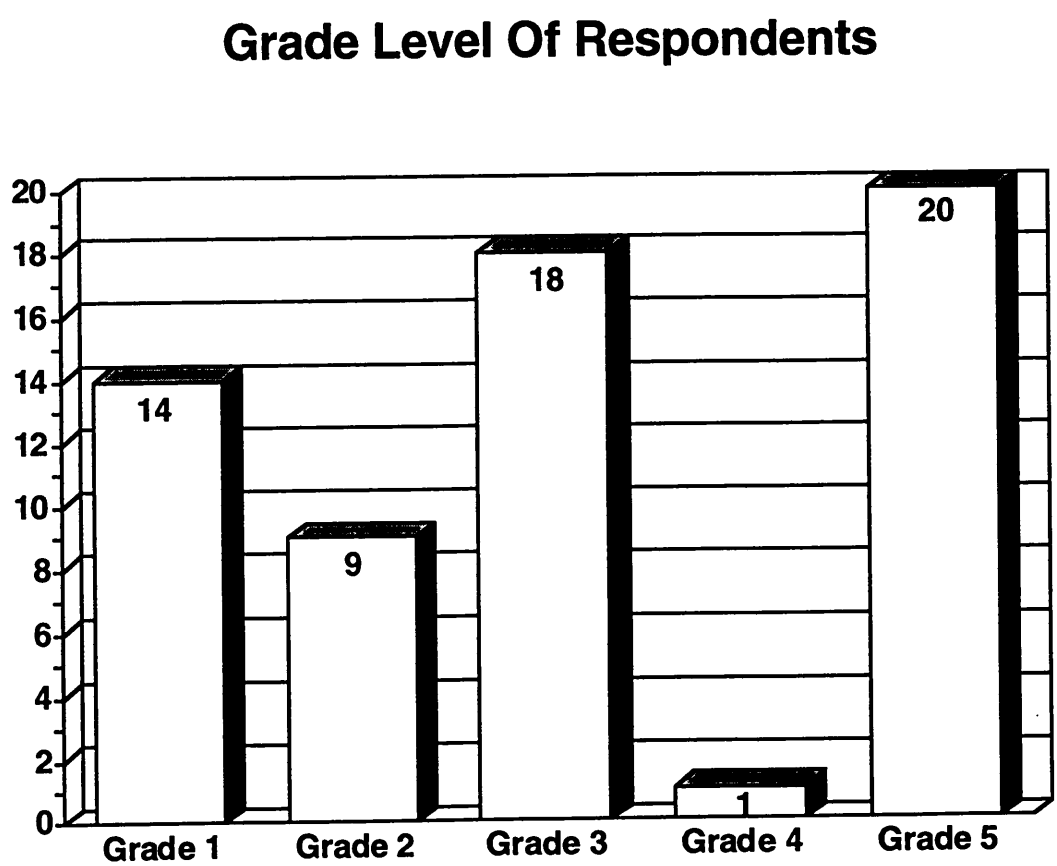
CHAPTER IV

FINDINGS AND IMPLICATIONS

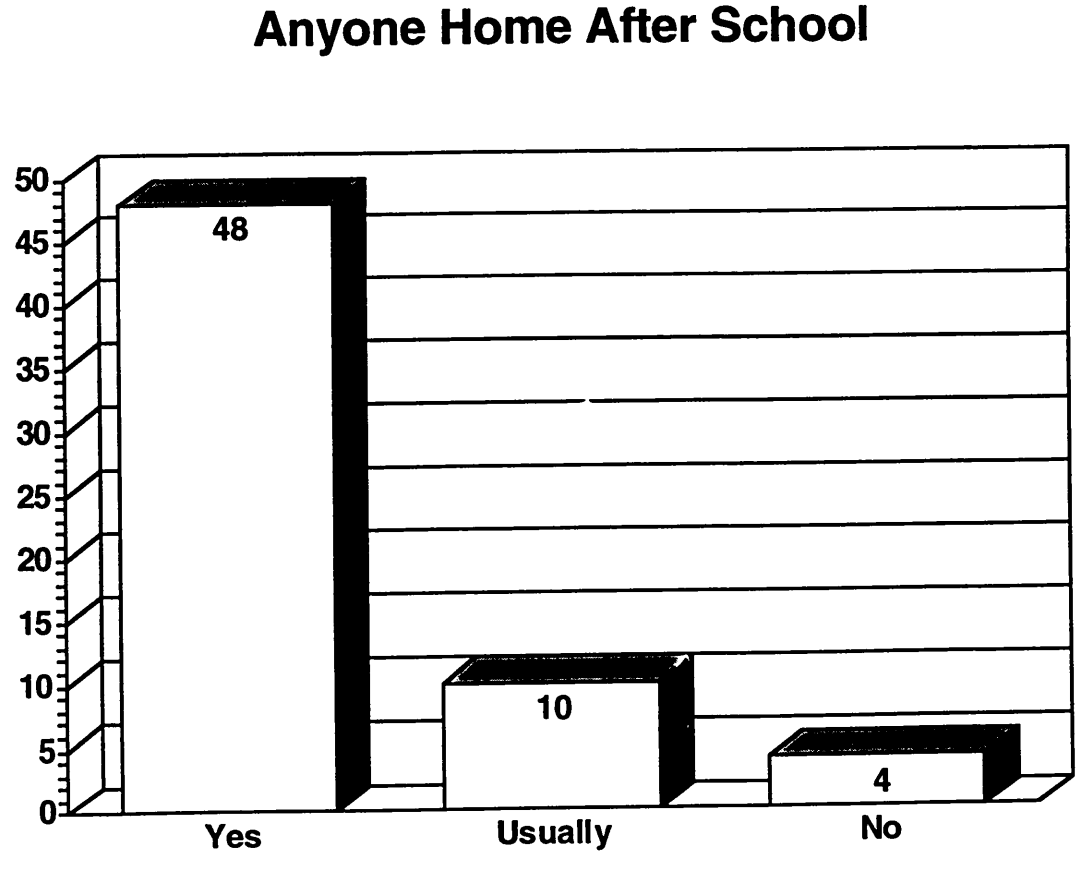
Much of the research on videogames does not deal with the videogames or videogame systems being used in most households today. The research deals mainly with arcade and computer games. This study is unique in that its orientation is concerned with today's home videogames. There was an attempt to examine the existing literature on computer games, videogames, and gaming and simulation exercises. There are a wide variety of computer games whose purpose is to educate and elicit behavioral change. The motivating factors of game playing have been combined with learning techniques and have yielded many positive results. It is indeed quite possible with the existing knowledge to produce learning instruments in the home videogame format that go beyond basic skills such as counting.

This researcher also questioned both parents and children about some of the aspects concerning the recent wave of home videogames at their disposal. These questions can be found in the appendix section of this paper. The responses indicate that there is some support among the lay community to further explore the learning and socializing potentials of home videogames.

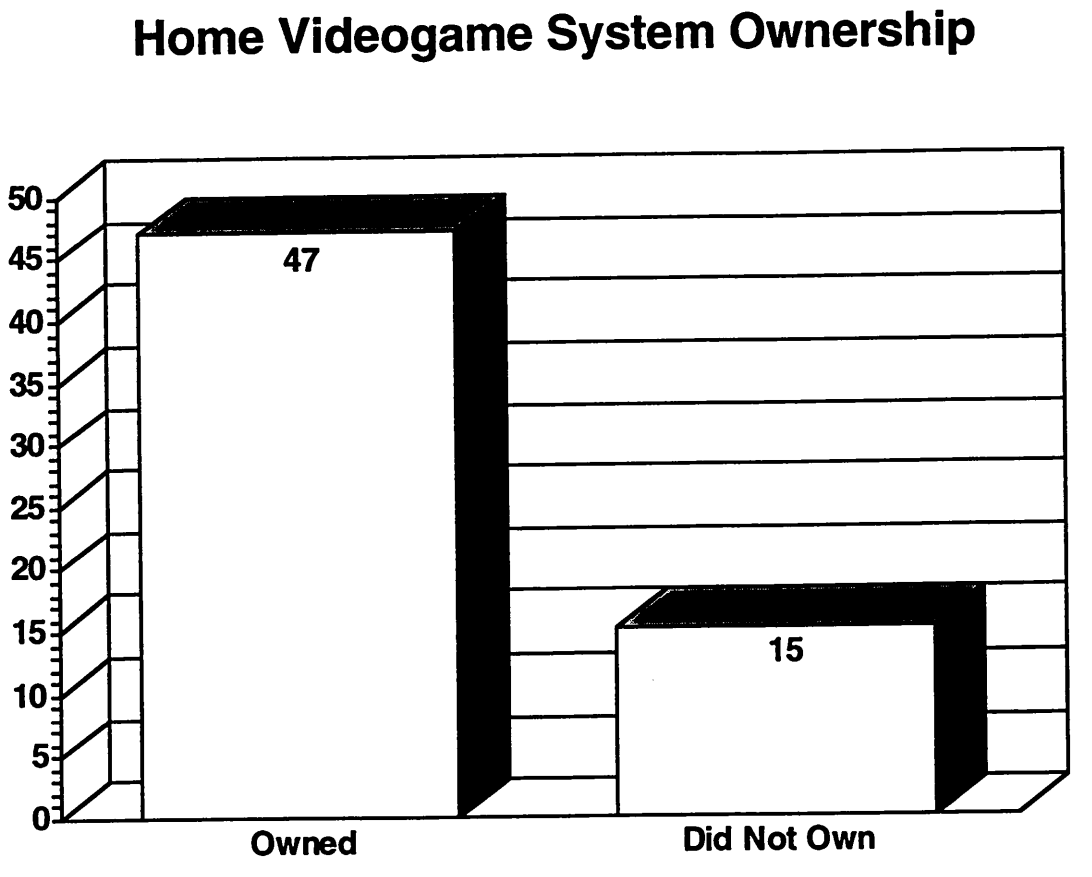
The second question asked what grade level the respondents were presently attending. Of those who completed the survey, fourteen were in the first grade, nine were in the second grade, eighteen were in the third grade, one respondent in the fourth grade, and twenty respondents in the fifth grade.



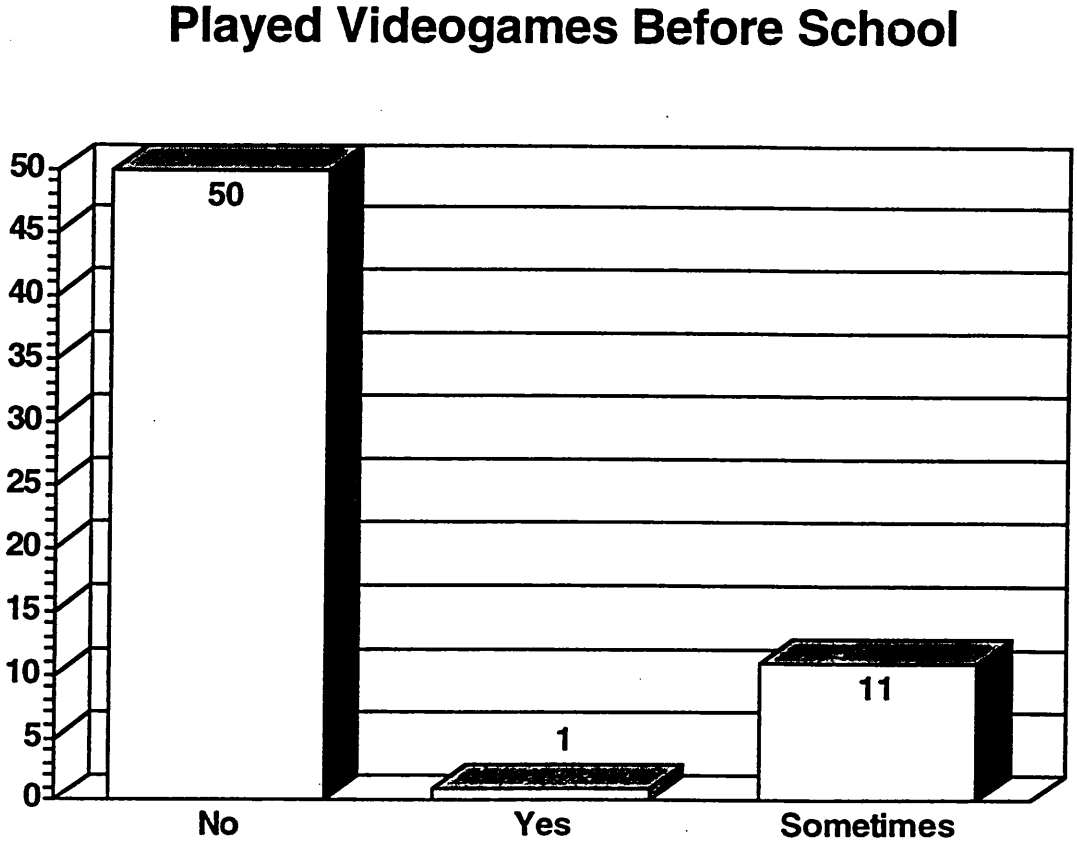
Question number three asked if there was anyone home when the child returned home from school. The responses indicate that forty-eight respondents said there was someone home, ten respondents replied there was usually someone home, and four respondents reported that there was nobody present when they arrived home from school. Of the total respondents this indicates that there are at least four respondents who return to an unsupervised setting when they arrive home from school. On any given school day that number could increase due to the ten respondents who answered "usually" to the question.



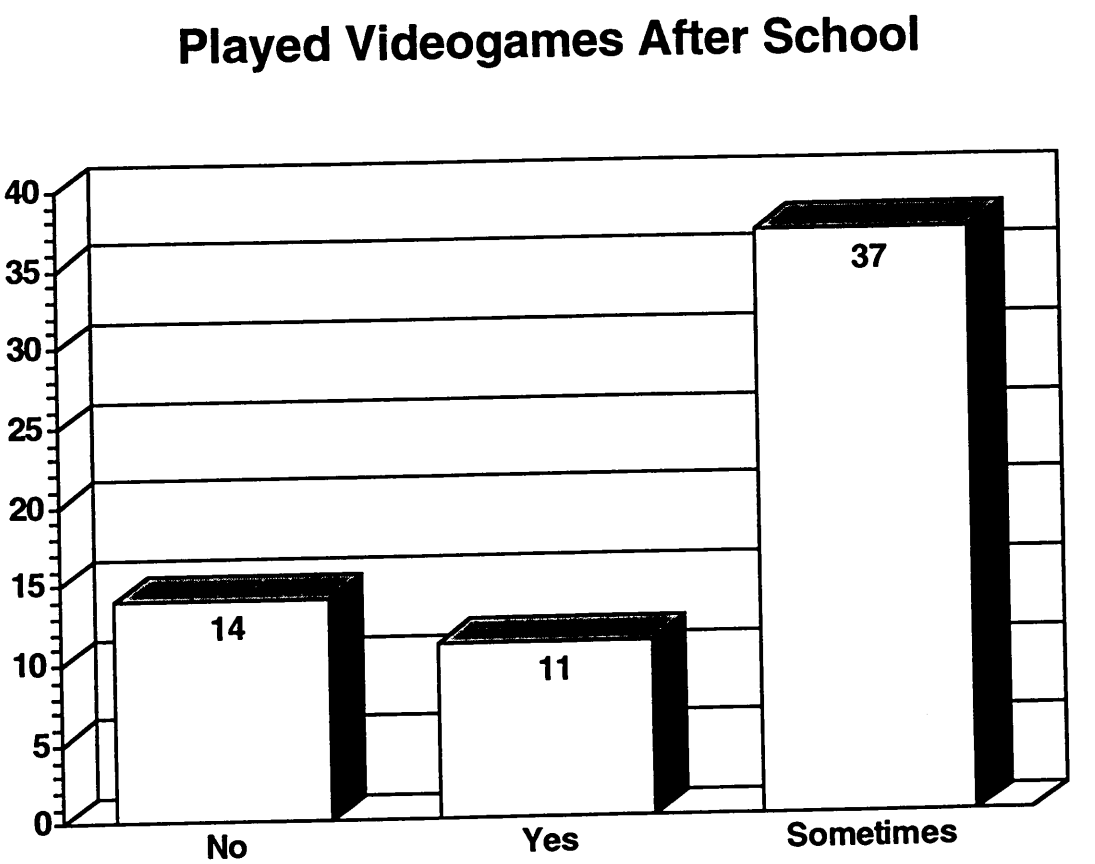
Question four asked if the respondents owned a home videogame system. Of those surveyed forty-seven reported owning a home videogame system, and fifteen reported not owning one. Three out of four or 75.8% of those responding reported owning a home videogame system.



Question number five asked if the respondents played videogames before they go to school. Fifty respondents replied negatively. One reported yes and eleven reported sometimes.

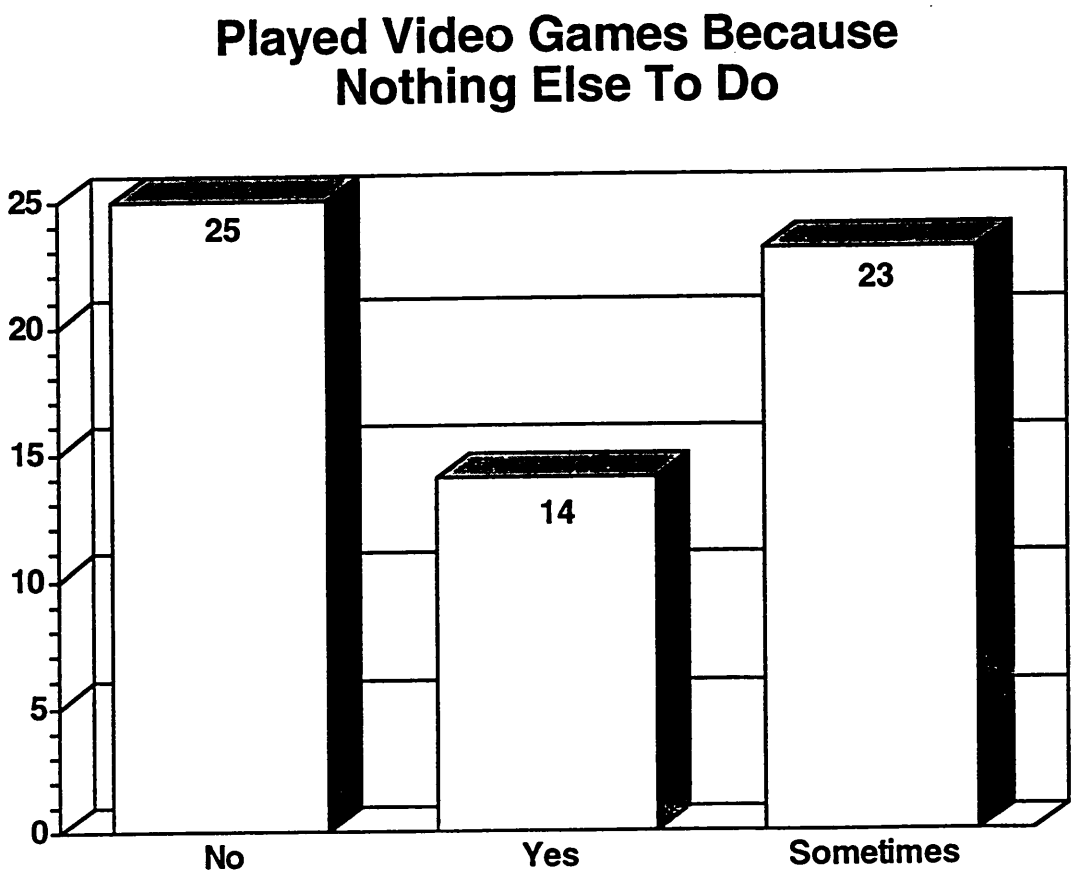


In question number six the respondents were asked if they played videogames when they returned home from school. Eleven responded yes and thirty seven responded sometimes. Only fourteen responded negatively, and this may correspond to the fifteen who reported not owning a home videogame system.

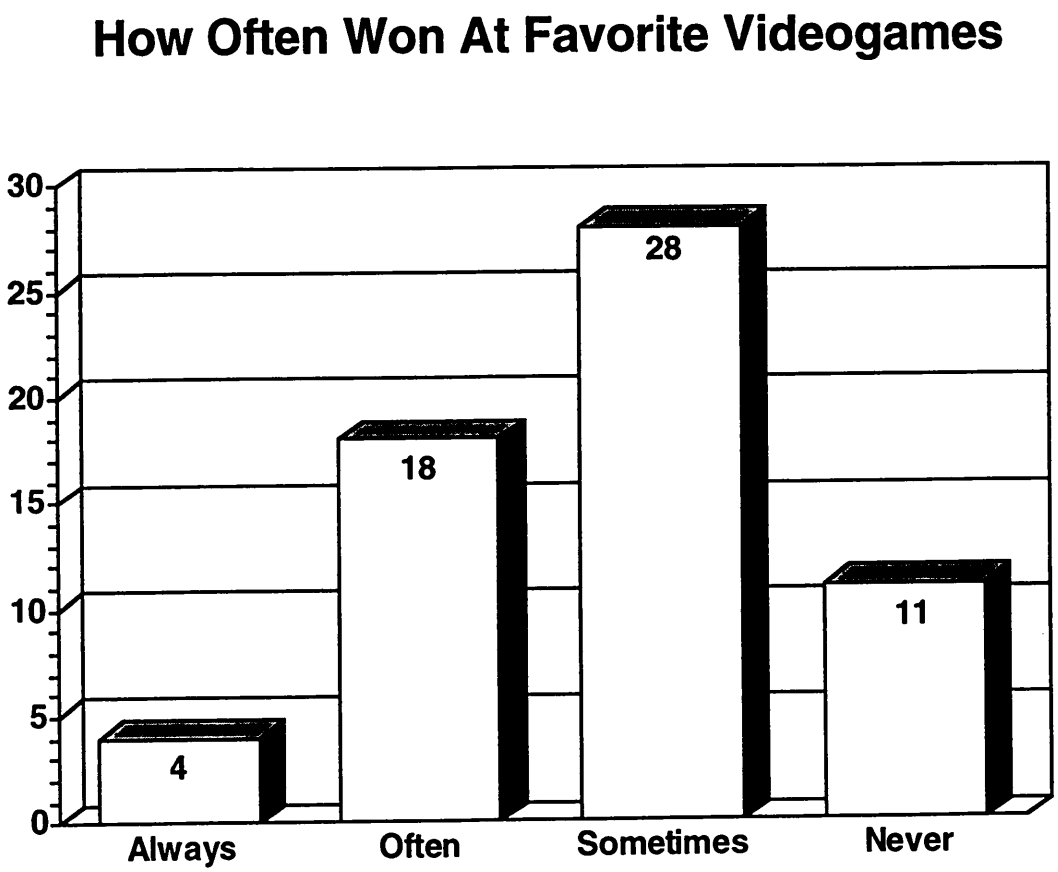


Question number seven asked if the respondents ever found videogame playing more exciting and more fun than being with their friends. One respondent chose not to reply, and thirty-five answered no. A total of six respondents replied yes to this question and another twenty replied sometimes videogames were more exciting than their friends. Senlo (1984) would characterize the positive responses as the respondent seeking companionship with the videogame and termed the game as an "electronic friend." According to Senlo the videogame then takes on a prominent role as a socializing agent.

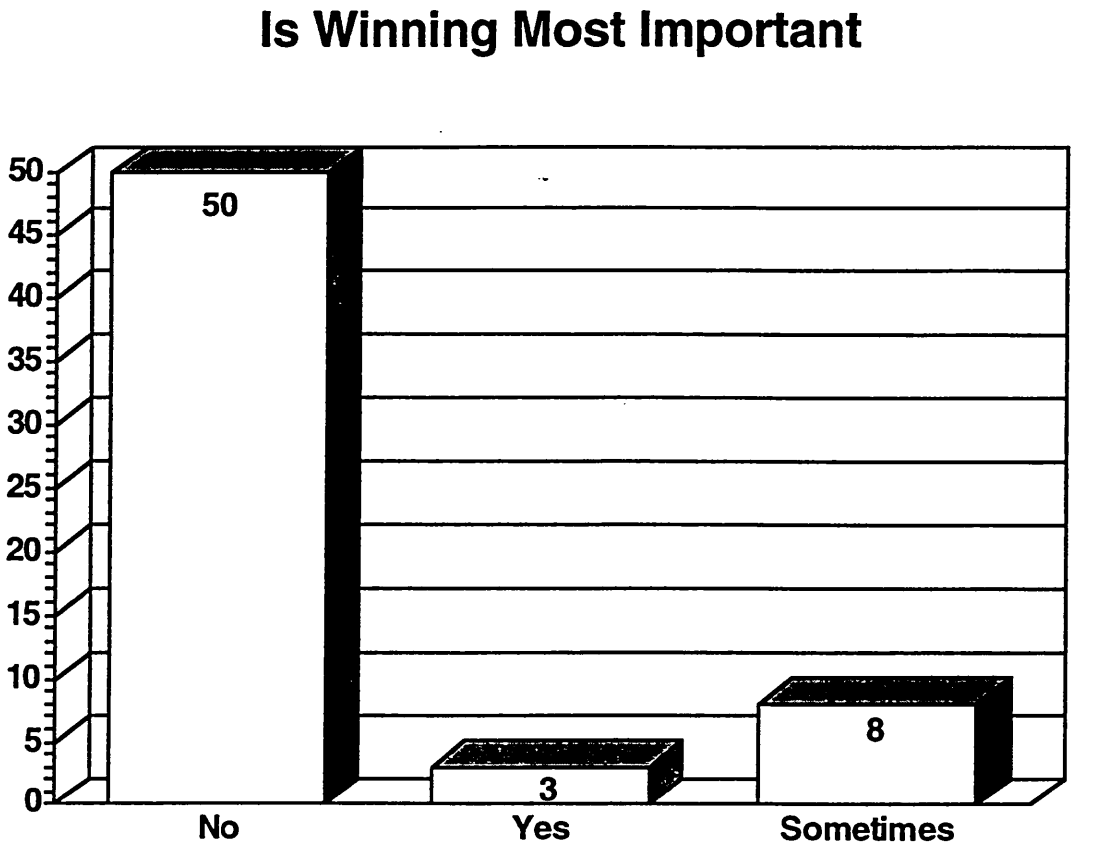
Question eight asked if they played videogames because they had nothing else to do. Twenty-five respondents answered no. Fourteen respondents answered yes, and another twenty three replied sometimes. The positive responses would seem to indicate that the respondents choose videogames over other activities such as interacting with peers, watching television, or reading.



Question number nine asked how often the respondents win at their favorite videogames. Four replied always, eighteen replied often, twenty eight replied sometimes, eleven replied never, and one respondent chose not to answer.

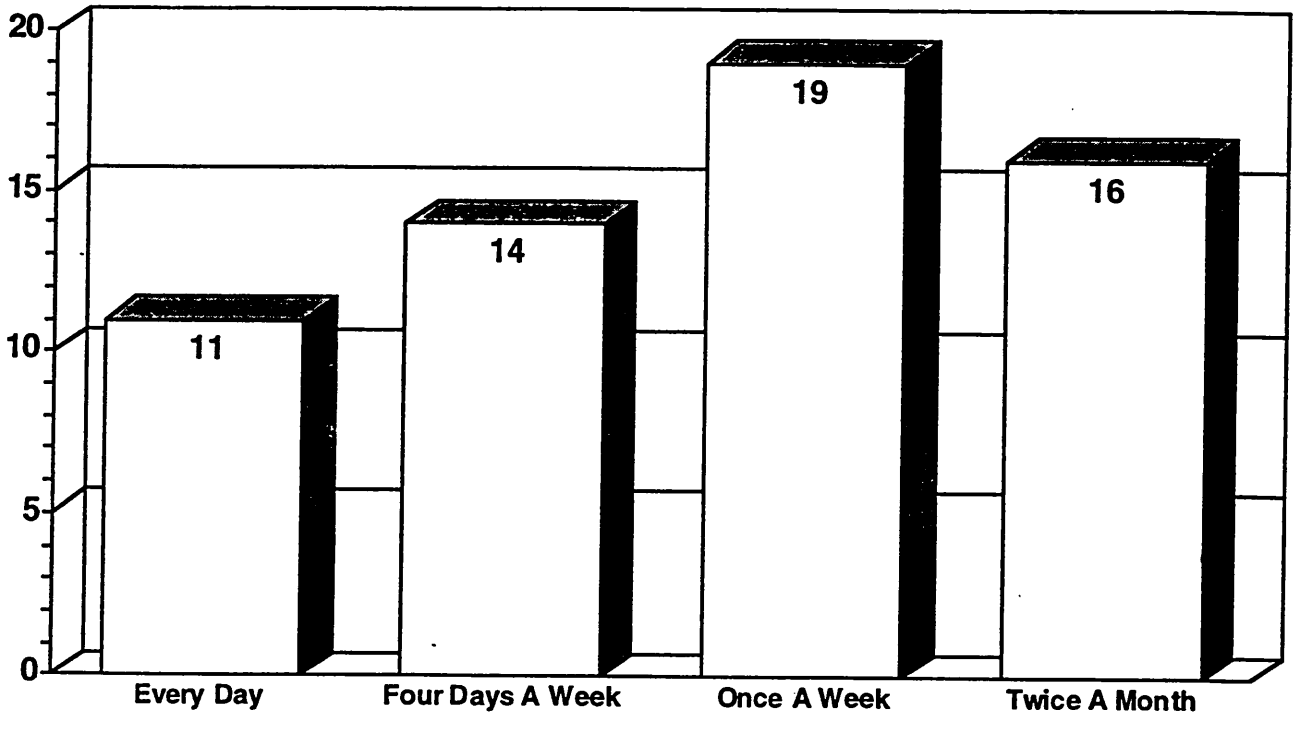


Question ten asked if winning was the most important thing about playing videogames. Only three respondents answered this question with a yes, and eight replied sometimes. Fifty respondents reported that winning was not the most important thing about playing videogames. This would indicate that the motivation for these respondents playing videogames lies somewhere other than winning.

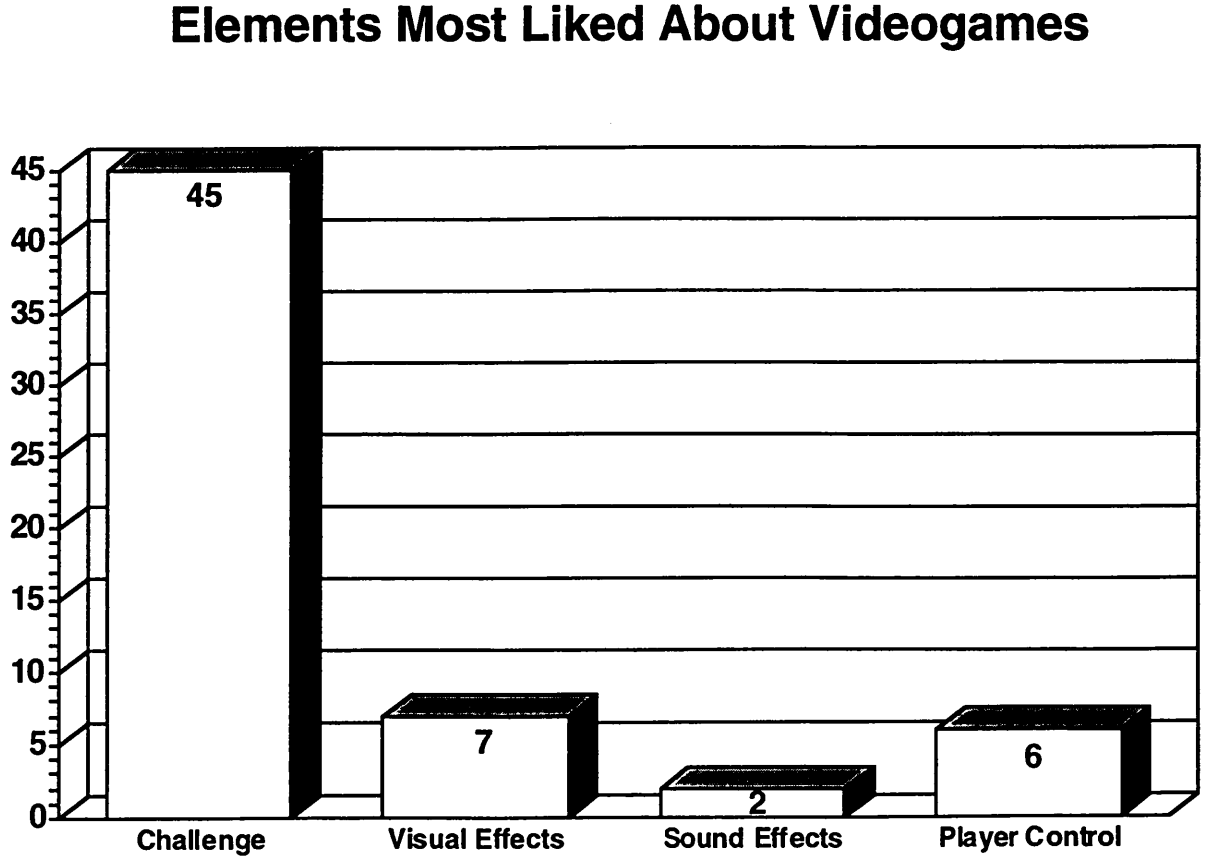


Question eleven asked about the frequency the respondents played videogames. Eleven reported playing everyday, fourteen played at least four days a week, nineteen reported playing once a week and sixteen reported playing twice a month. Two respondents chose not to answer this question.

Frequency Playing Videogames



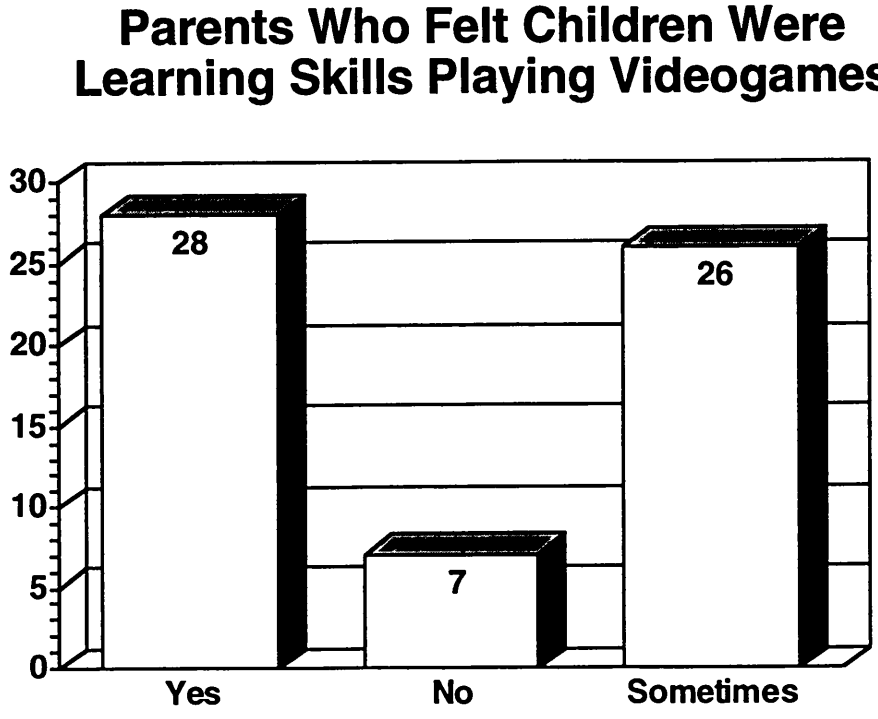
Question number twelve asked the respondents what they liked the most about videogames. The choices given were challenge, visual effects, sound effects, and control. Forty-five respondents said they liked the challenge offered in videogames the most. Malone (1983) reports that challenge is one of the motivating factors in computer and videogames. Seven respondents replied that they liked the visual effects the most, two replied that they liked the sound effects, and six respondents said that player control was the most important aspect of videogames.



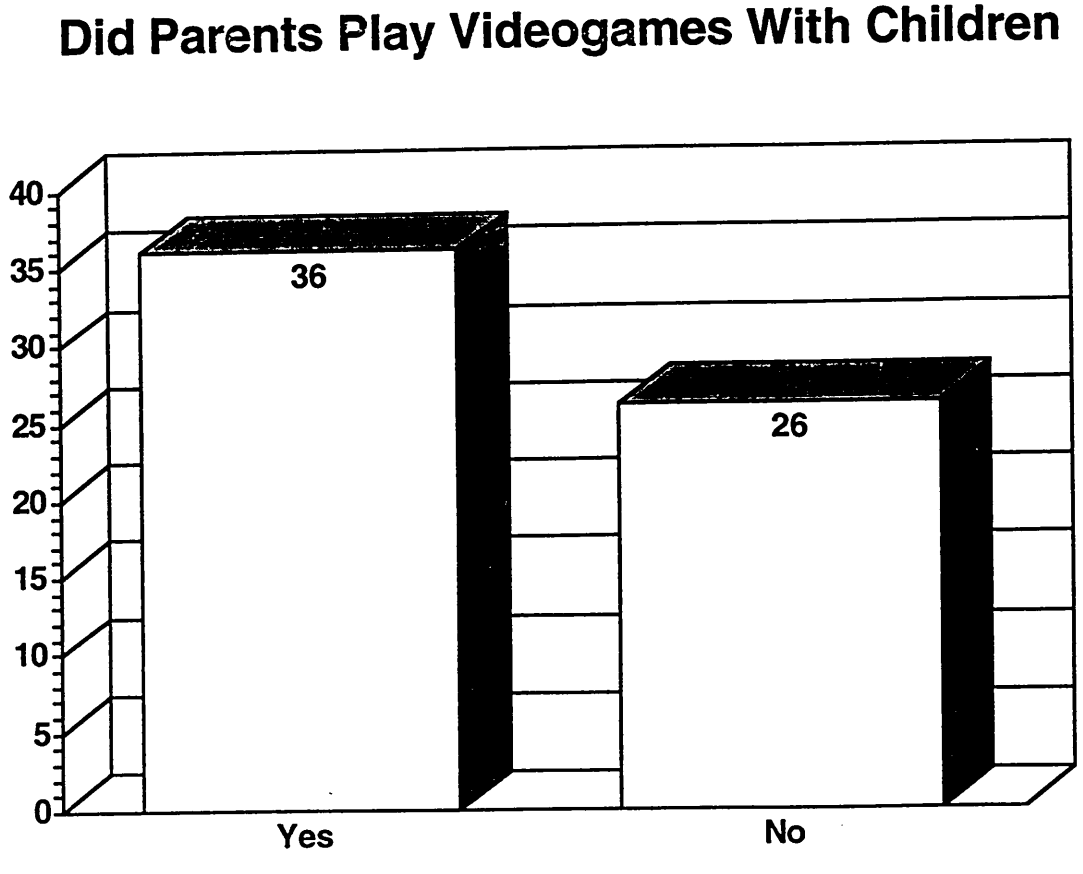
The last question asked of the children in the survey was what is their favorite videogame. There were many different games mentioned, but the one mentioned with the most frequency was the Super Mario game by Nintendo game systems.

Parent Responses

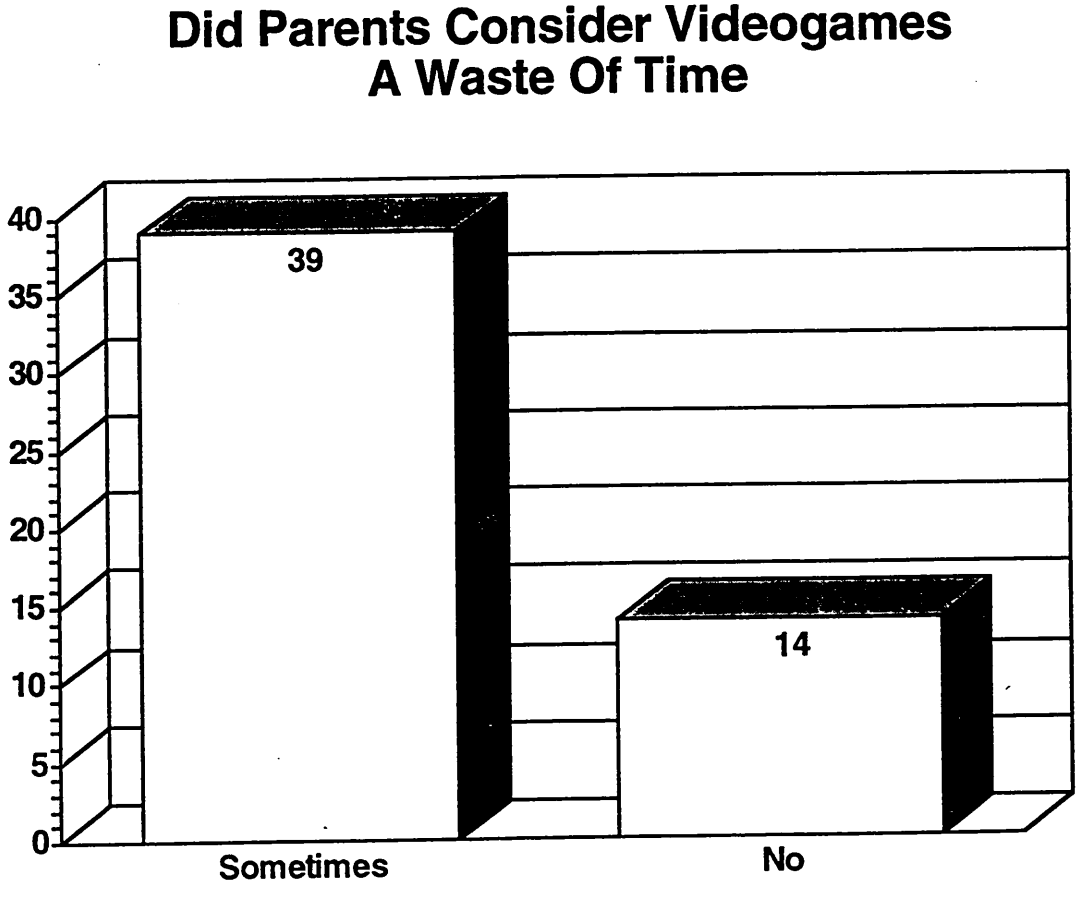
Question number one asked parents if they felt their children were learning certain skills while they are playing videogames. Twenty-eight answered yes and twenty-six replied sometimes. Only seven parents responded negatively. If terms of percentages, 88.5% of the parents who responded believe at least sometimes that their children are learning certain skills while playing videogames.



Question number two asked if parents played videogames with their children. Thirty-six parents responded yes, and twenty-six responded no. The response indicates that a majority of parents are playing and interacting with their children using videogames. These parents that are interacting with their children could easily assume the role of a facilitator in a videogame whose purpose is to educate and inform. Gaming and simulation experts consider the role of the facilitator very important for the successful completion of manual and person and machine exercises.

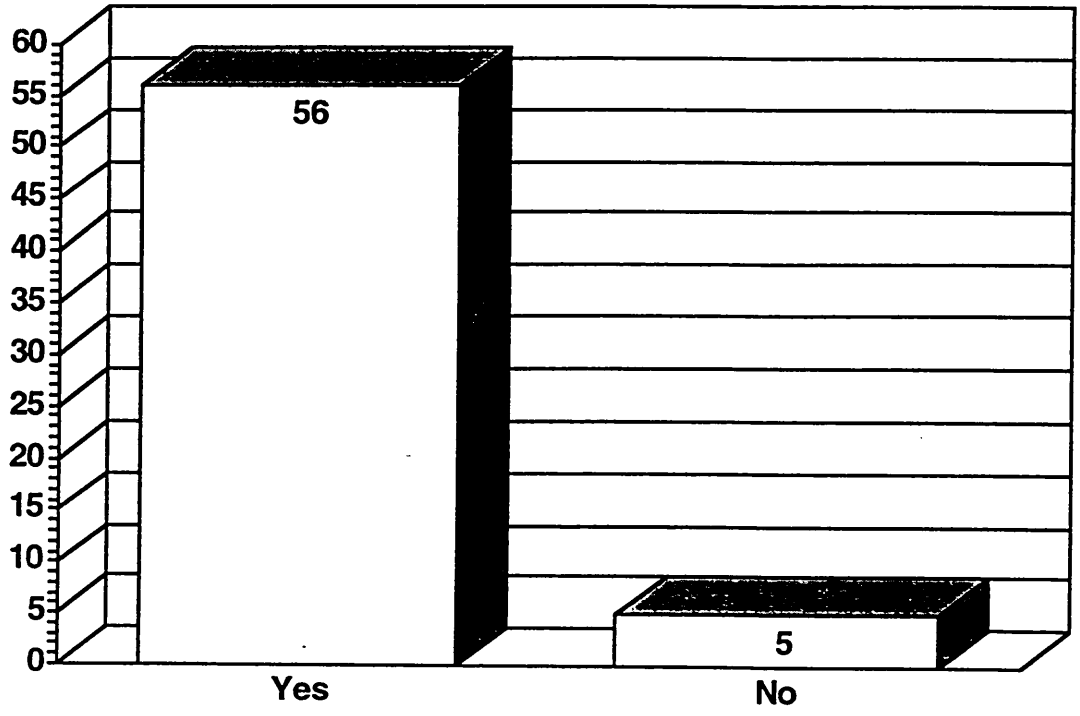


Question three inquired if parents considered their children's videogame playing a waste of time. Nine parents answered yes to this question. Thirty-nine parents sometimes felt that their children's videogame playing was a waste of time, and fourteen felt that it was not a waste of time.

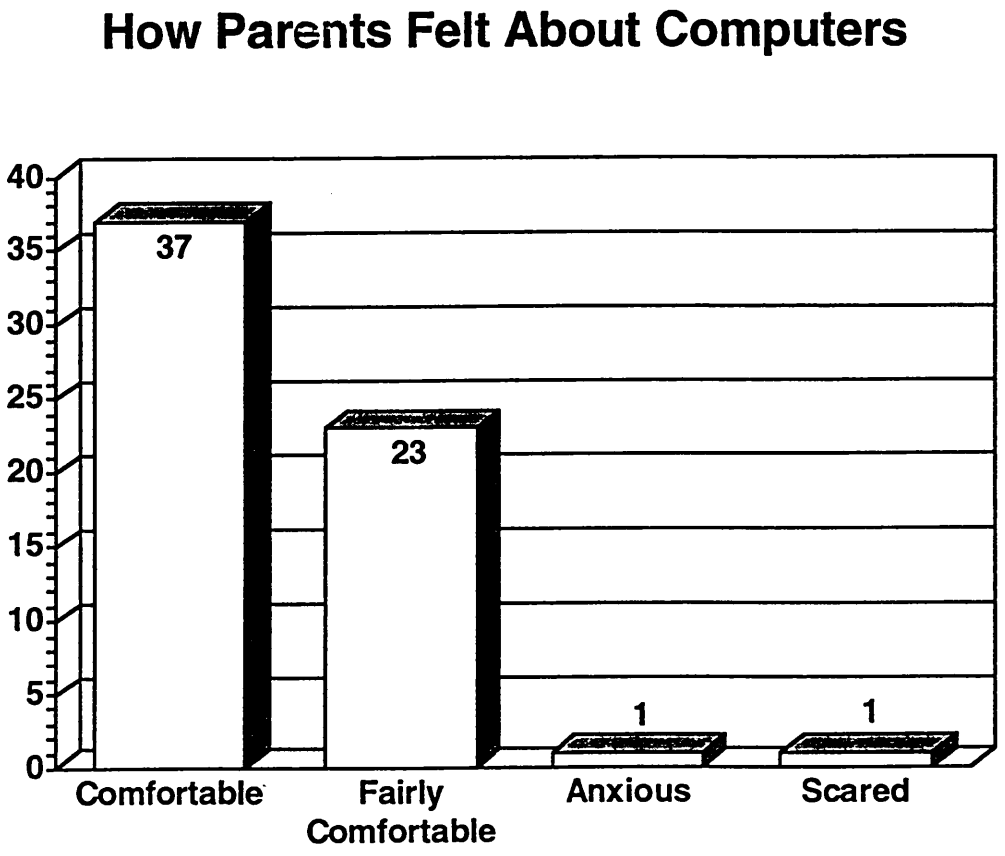


Question number four asked if videogames should be expanded to teach more defined skills. Fifty-six parents felt that they should teach more defined skills to their children. Only five parents responded negatively to this question. In terms of percentages 91.8% of the parents surveyed would like to see the content of videogames be more informative and educational.

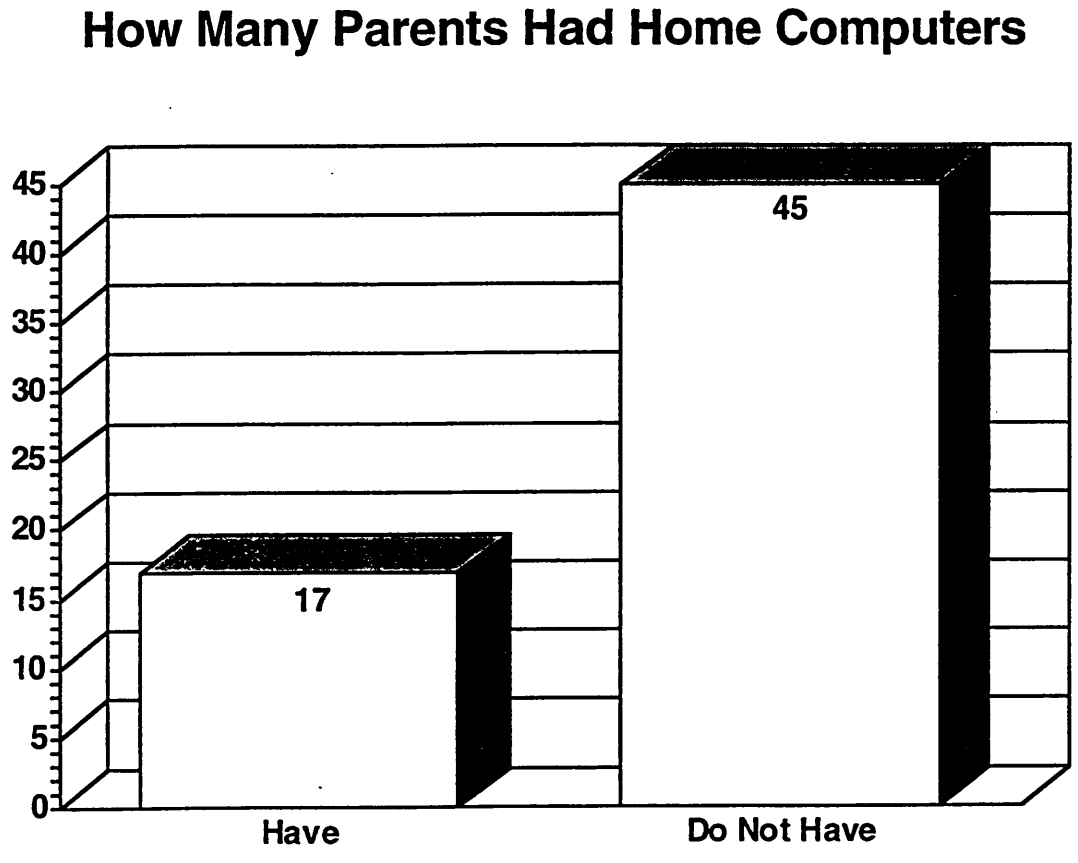
Should Videogames Teach More Defined Skills



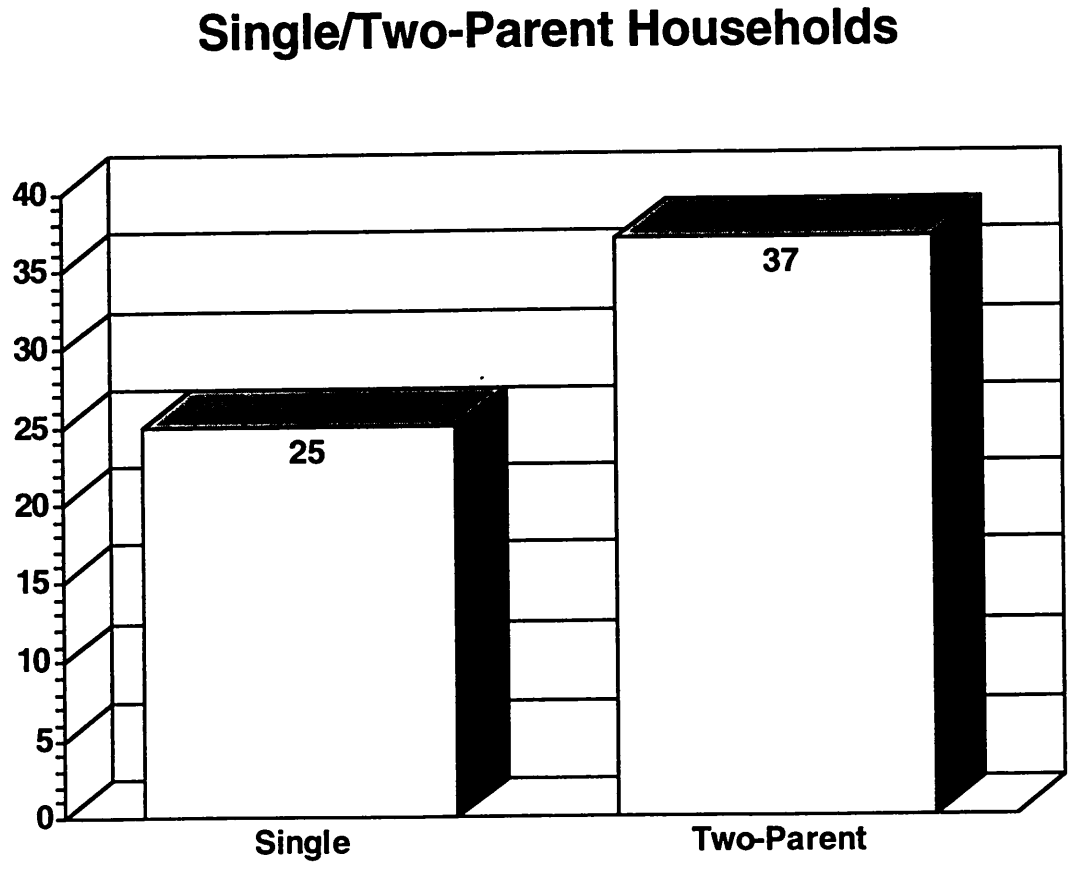
Question five asked parents how they felt about computers in general. Thirty-seven said they felt comfortable, twenty-three said they felt fairly comfortable, one replied they were anxious about computers, and one parent replied they were scared of computers.



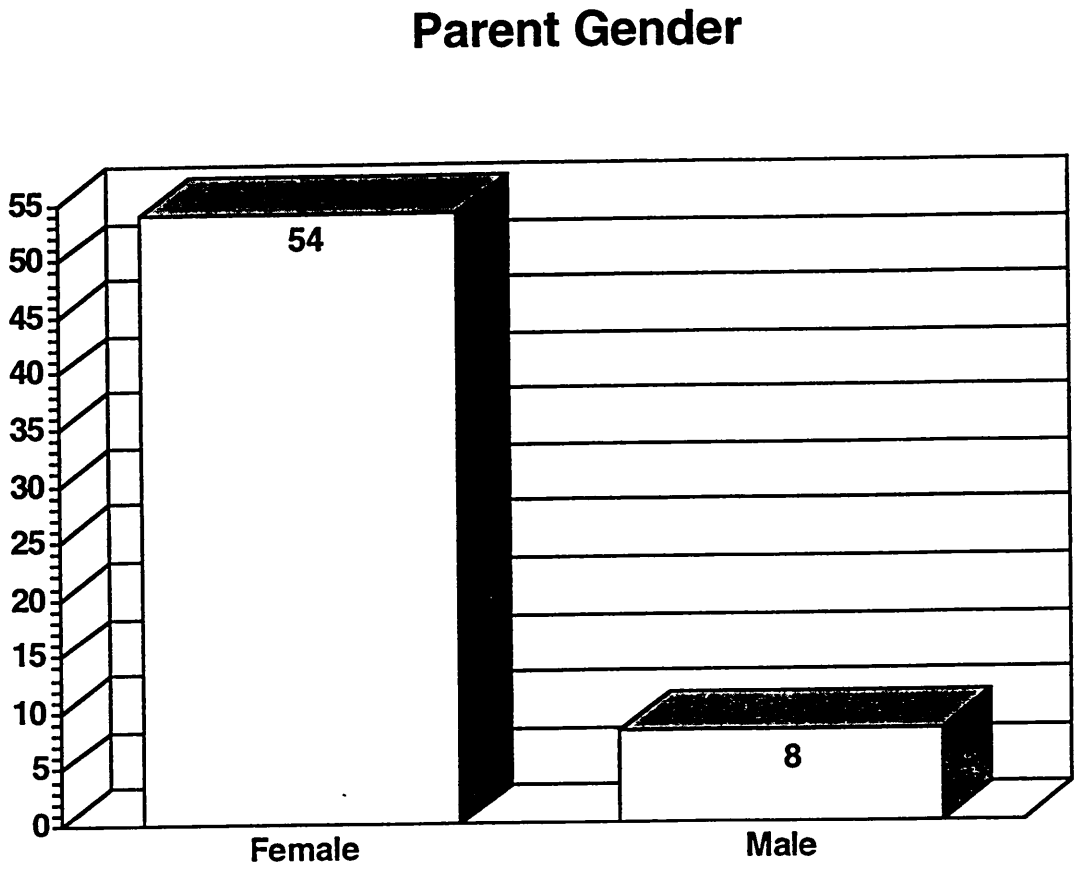
Question six asked how many parents had a home computer. Seventeen parents have a home computer while forty-five reported not having one.



Question seven asked if the parent responding was a single parent. Of those who responded to the survey twenty-five reported being single parents and thirty seven reported being in a two-parent household.



Question eight asked the gender of the parent. Of those who answered the survey fifty-four were female and eight were male.



Data Analysis

The purpose of this study is to determine if it would be feasible to use home videogames as a self-help tool for children. The researcher feels that in order to determine if home videogames are a feasible medium as a self-help tool for children there would have to be a desire for such an application. Based on the survey and the literature review, this researcher feels there is a desire to apply home videogames to the task of educating and socializing children with skills and values more in align with parental objectives. A relatively low-cost infrastructure that would implement the concept of using home videogames for such a purpose already exists in the form of home videogame terminals. Lastly, the nature of home videogames would have to lend themselves to such an application. In order to find support for the feasibility of using home videogames as a self-help tool for children this researcher asked questions about parents' attitudes and perceptions concerning computers and home videogames.

There were many important aspects of home videogame systems brought to light in the survey. Many more of the households surveyed owned home videogame systems than computers. Videogame ownership was

reported by 75.8% of the respondents while only 27.4% owned a home computer. These figures would indicate that a relatively affordable infrastructure of low-end computer terminals exists in the form of home videogame terminals.

Parents were asked how they felt about computers and two of sixty-two respondents felt anxious or scared. The remainder reported being comfortable or fairly comfortable with computers. This would seem to reveal that there is a certain acceptance of computers in general. This favorable attitude was reflected more in the reported ownership of a home videogame system as compared to home computers. According to this survey there are already videogame terminals in three of the four households surveyed. Of the sixty-two respondents only seventeen owned a home computer and none of these were single parents. The gender of the parent filling out the survey was asked and it indicated that twenty-four of the single-parent households were headed by women. Only one single-parent household was headed by a man. There may be other circumstances other than the expense that would indicate why no home computers were owned by single-parent households, but the design of the survey instrument does not bring them forward.

Parents' attitudes about home videogames are much more defined. In response to the question should

videogames be expanded to teach more defined skills, 91.8% of the parents who responded to the survey answered yes. The survey revealed that of the sixty-two respondents, twenty-five reported they were single-parents. At the very least this reveals that the burden of parenting in twenty-five families is the responsibility of one individual. From this group twenty-three expressed the desire that videogames should be expanded to teach more defined skills to children. From the thirty-seven respondents who indicated that they are a two-parent household, thirty-five also expressed the desire to see videogames expanded to teach more defined skills.

A positive attitude was again reflected by parents about home videogames in the sense that the majority of the respondents believed their children were already learning certain skills playing home videogames. It was also reported that nine respondents felt that home videogame playing was a waste of time. Again the majority thought it was a waste of time only sometimes. The fore mentioned data indicates to the researcher that there is a positive attitude and acceptance of home videogames as learning agents being put forth by the majority of responding parents.

The 58.1% of parents who responded that they play videogames with their children is also encouraging.

Actively playing videogames together has more value in a parent/child relationship than the act of passively watching television.

Of the parents questioned, 91.8% feel the need for more meaningful content in the home videogames that are available for them. Perhaps if the content were to be made more meaningful and more aligned with parental objectives then the number of parents who play videogames with their children would rise. Instead of the parent's function as role models being displaced by videogames, it may possible that the time spent together could be enhanced and increased for the benefit of both the child and the parent.

At this point I would like to include some comments that two parents felt compelled to write about videogames. I will call them parent one and parent two.

Parent one comments, "I feel that the computer is a much more useful of a learning tool for children. In my opinion videogames are a waste of time and money."

Parent two replies, "Often times, like television, they may become a convenient babysitter for children although it may be unintentional on the part of the parent. We currently do not have a videogame system in our home because of finances, not because I'm opposed to them. I think videogames could be developed

into learning tools depending on the concepts they introduce and as long as they are monitored by parents. I think they should be a family activity."

Parent one was very opposed to the idea of videogames in general. The researcher's belief that home videogame playing can be a feasible format as a learning tool for children was revealed in the consent form that accompanied the survey instrument (See Appendices.) Parent one was unwilling, or unable to accept the utility videogames are able to provide. Conversely parent two was receptive to the idea of expanding the usefulness of videogames.

The idea that a home videogame system could be useful tool for parents and children seems to be understood by parent two. The data collected from parents and children may serve as valuable input for the design requirements of any future videogames whose purpose is to support or reinforce parental objectives.

The survey completed by the children showed that the interest in home videogames did not have a high level of incidence particular to either sex. The grade level of the respondents did reveal that only one fourth grader completed the survey. Why this is can not be explained by the researcher. The survey did indicate that twenty-six of sixty-two children found that at least sometimes videogames are more exciting

then being with their friends. Only three respondents considered winning the most important thing about playing videogames, and only four reported that they win all the time. The motivation for using home videogames rests primarily in the challenge of the game as reported by forty-five students. The respondents played more videogames after school than before school.

The literature review reveals a concern on the part of some educators, scientists, and parents that the technologies of television and videogames are diminishing the time parents have to present themselves as role models for their children. This displacement of time that would be spent interacting with peers or parents is often referred to as the indirect effects of television viewing or videogame playing. The direct effects of these media would refer to any changes in behavior, short term or long term. Due to the perceived violent content of both media, most studies focus on changes in levels of perceived aggression and hostility. The data also indicate that when attention is given to insure that the content of media are structured with positive themes, positive results are achieved.

Though there is limited research available on the effects of home videogames, it is believed content is also responsible for its effects. It may be possible

to use videogames for the drill and practice of self-help skills for children. It may be assumed the desirable elements from videogames can be identified and restructured into challenging and entertaining learning devices for children. Realism and player control are very important attributes of a videogame. The player must be able to identify with the game character and also with the environment the game is played in. A game for young children could consist of a series of tasks related to washing and dressing before they go to school. The game would need the intrinsic motivating elements of challenge, fantasy, and curiosity (as defined by Malone, 1983) to remain interesting, and these elements would keep the player motivated to continue the gameplay.

Videogames as a self-help tool for children should take full advantage of the modalities that they affect, make full use of their interactive qualities, and clearly present the behavioral objectives that are relevant to the needs of the user.

CHAPTER V

CONCLUSIONS AND OBSERVATIONS

The goal of this study was to assess the feasibility of using home videogames as a self-help tool for children. There was ample information available supporting the use of play theory in the form of computer games as a way of imparting certain kinds of knowledge and skills to individuals in a wide range of age groups. The very nature of home videogames lends itself to this type of application. There is a wide acceptance of home videogames by children and parents alike. This survey showed the desire of some parents to explore the medium of home videogames for their potential as a learning agent. The survey also pointed out that three of the four households surveyed own a home videogame system. An infrastructure is already in place and the parents surveyed would like to see the medium teach more defined skills to their children. A majority of the parents already felt their children were acquiring certain skills in their videogame play. Children were reported to be increasingly trading the glow of television programming for the glow of home videogames.

Parents and their opportunities to act as role models were being replaced by the technologies of television and home videogames. Much of this displacement of parents serving as role models stems from the economic and social conditions of todays modern world. Are children today being equipped with the proper values and skills in order for them to function with responsible, appropriate responses to societal situations and demands? Are we as parents, educators, and adults using all the skills and tools at our disposal in order to prepare our children for the world we have created for them? If it means we must develop non-traditional ways of imparting skills and values to our children, perhaps we had better consider all of the approaches at hand.

We live in a culture that is heavily reliant on the technology of television and its attending entertainment devices. What we need to do is go beyond the application of television and videogames as simply toys and transform them into tools whose purpose is to aid in the positive socialization of our children. Papert (1980) stated that the psychological impact of television could be increased by the computer in two ways. He advocated designing the content for specific viewers, and making the television interactive. Home videogame terminals have accomplished both tasks. It

is time to go beyond the entertainment value and applications of home videogames and explore their educational and socializing potential.

If we take the desire to play videogames and direct it towards videogame play that employs the simulated completion of self-help skills, we have a situation where positive thematic input is repeated and reinforced. Goals would focus on self-help and problem solving skills. Self-help skills could cover a broad range of life coping skills such as safety issues. A game character could be guided by the player on a walk through a simulated neighborhood where every day encounters could be simulated and dealt with in a safe learning environment. The diminished role parents are experiencing in the socialization of their children due to the intrusive nature of television and videogames can be somewhat counteracted. Content and application of these technologies could be more aligned with parental objectives.

In our modern society, technology is playing an increasing role as a socializing agent and it is up to us to insure that its impact is positive. As far back as 1963 Bandura and Walters assert mass media are one way to further the goals of parents. They also believe that careful consideration about the content of

children's mass media can greatly benefit both children and parents.

Videogames were not yet available when Bandura and Walters (1963) made their assertions. The idea that positive, prosocial content of mass media may prove beneficial holds true today. Lesser (1974) indicates that children will learn attitudes like kindness and altruism if presented with the proper models or modeling technique.

No society can hold back technological change and its resultant sociological impact. New technologies along with ideas about their use are constantly being introduced, and it takes time to see how they effect personality development and personal relationships between people and people and machines. One way to accomplish this would be to borrow some of the techniques used in gaming and simulation exercises. Learning through simulation is founded in the theory that learning can be increased and heightened when based on experiences that are fun, entertaining and gamelike.

It is our social responsibility as parents and adults to see that children are prepared and have the skills to interact in the world environments we have created for them. If a child's videogame system can be transformed to an in-home gambling device, then surely

such expertise can be made to better benefit our children. If the US Army can take a child's videogame and transform it to a tank gunners training device, then we certainly owe it to our children to explore other educational possibilities home videogames have to offer. A videogame that was based on the dangers that inner-city children are faced with might provide them with the skills and alternatives that would keep them out of harms way.

Home videogame systems offer parents and children a low-cost and affordable medium that many consider an entry level to the world of computers. Many lower income families cannot afford a personal computer and all the educational software that are available for them, but many can afford one of the several home videogame systems. It is unfortunate that more educational and informational material is not provided for the parents and children who do not have personal computers at their disposal. By making videogames a family activity as parent two suggested, parenting can be increased rather than being displaced by the influx of videogames into the American household.

BIBLIOGRAPHY

Anderson, C. A., & Ford, C. M. (1986). Affect of the game player: Short-term effects of highly and mildly aggressive video games. Personality and Social Psychology Bulletin, 12(4), 390-402.

Anderson, G. R., (1991) Nintendo/Lottery Market Test Cancelled. News Release, Minnesota State Lottery.

Bandura, A., & Walters, R. H. (1963). Social learning and personality development. Holt, Rinehart, and Winston Inc.

Buckalew, L. W., & Buckalew, P. B. (1983). Behavioral management of exceptional children using videogames as a reward. Perceptual And Motor Skills, 56(2), 580.

Chaffin, J. D., Maxwell, B., & Thompson, B. (1982). ARC-ED curriculum: The application of video game formats to educational software. Exceptional Children, 49(2), 173-178.

Chambers, J. H., & Ascione, F. R. (1986). The effects of prosocial and aggressive videogames on children's donating and helping. Journal of Genetic Psychology, 148(4), 499-505

Christopher, F. S., Fabes, R. A., & Wilson, P. (1989). A time to reexamine the role of television in family life. Family Relations, 38, 337-341.

Comstock, G., Chaffe, S., Katzman, N., McCombs, M., & Roberts, D. (1980). Television and human behavior. New York: Columbia University Press.

Condry, J., & Keith, D. (1983). Educational and recreational uses of computer technology. Youth and Society, 15(1), 87-112.

Cooper, J., & Mackie, D. (1986). Video games and aggression in children. Journal of Applied Social Psychology, 16(8), 726-744.

Creasey, G. L., & Myers, B. J. (1986). Video games and children: Effects on leisure activities, schoolwork, and peer involvement. Merrill-Palmer Quarterly, 32(3), 251-262.

Crookall, D., Martin, A., Saunders, D. & Coote, A. (1986). Human and computer involvement in simulation. Simulation & Games, 17(3), 345-375.

Dominick, J. R. (1984). Videogames, television violence, and aggression in teenagers. Journal of Communication, 34, 136-147.

Dorr, A. (1985). Contents for experience with emotion, with special attention to television. In M. Lewis & C. Sarni (Eds.), The socialization of emotion (pp. 55-85). New York: Plenum Press.

Douvan, E. (1963). Employment and the adolescent. In F. I. Nye & L. W. Hoffman (Eds.), The employed mother in America (pp. 142-164). Chicago: Rand McNally.

Egli, E. A., & Meyers, L. S. (1984). The role of video game playing in adolescent life: Is there reason to be concerned? Bulletin of the Psychonomic Society, 22(4), 309-312.

Ellis, D. (1984). Video arcades, youth, and trouble. Youth & Society, 16(1), 47-65.

Farra, H. (1980). Self-development games and simulations: An evaluation. In R. E. Horn & A. Cleaves (Eds.), The guide to simulations/games for education and training (pp. 223-238). Beverly Hills: Sage Publications Inc.

Gibb, G. D., Bailey, J. R., Lambirth, T. T. and Wilson, W. P. (1983). Personality differences between high and low electronic videogame users. The Journal of Psychology, 114, 159-165.

Good, W. J. (1964). The family. Columbia University, Prentice Hall Inc.

Graybill, D., Strawniak, M., Hunter, T., & O'Leary, M. (1987). Effects of playing versus observing violent versus nonviolent video games on children's aggression. Psychology, A Quarterly Journal of Human Behavior, 24(3), 1-7.

Greenfield, P. M. (1984). Mind and media: The effects of television, video games, and computers. Cambridge, MA: Harvard University Press.

Huston, A. C., & Wright, J. C. (1983). A matter of form: Potentials of television for young viewers. American Psychologist, 38, 835-843.

Huston, A. C., Zillmann, D., & Bryant, J. (1994). Media influence, public policy, and the family. In D. Zillmann, J. Bryant, & A. C. Huston (Eds.), Media, Children, and The Family (pp. 3-18). Hillside, NJ, Hove, UK: Lawrence Erlbaum Associates.

Kinder, M. (1991). Playing with Power in Movies, Television, and Videogames. Los Angles, Ca: University of California Press.

Lepper, M. R. (1985). Microcomputers in education: Motivational and social issues. American Psychologist, 40(1), 1-18.

Lesser, G. S. (1974). Children and television: Lessons from Sesame Street. New York: Random House.

Loftus, G. R., & Loftus, E. F. (1983). Mind at Play: The psychology of videogames. New York: Basic Books Inc.

Malone, T. W. (1983). Guidelines for designing educational computer programs. Childhood Education, 59, 241-247.

Malone, T. W. (1981). Toward a theory of intrinsically motivating instruction. Cognitive Science, 4, 333-369.

Malouff, J. M., Post-Gorden, J. C., Rodasta, A. L., & Schutte, N. S. (1988). Effects of playing videogames on children's aggressive and other behaviors. Journal of Applied Social Psychology, 18(5), 454-460.

Mander, J. (1977). Four arguments for the elimination of television. New York: Quill.

McGill, L. (1994). By the numbers what kids watch. Media Studies Journal, 8(4), 95-104.

Mehrabain, A., & Wixen, W. J. (1986). Preferences for individual video games as a function of their emotional effects on players. Journal of Applied Social Psychology, 16(1), 3-15.

National Institute of Mental Health. (1982). Television and behavior: Ten years of scientific progress and implications for the eighties (DHHS Publication No. ADM 82-1196). Washington, DC: U.S. Government Printing Office.

Nawrocki, L. H. & Winner, J. L. (1983). Video games: Instructional potential and Classification. Journal of Computer-Based Instruction, 10(3&4), 80-82.

Nintendo of America Inc. (1990). The Complete NES Game Pac Directory.

Paperny, D.M., & Starn, J.R. (1989, May). Adolescent pregnancy prevention by health education computer

games: Computer assisted instruction of knowledge and attitudes. Pediatrics, 83(5), 742-752.

Papert, S. (1980). Mindstorms: Children, Computers, and Powerful Ideas. New York: Basic Books Inc.

Postman, N. (1985). Amusing Ourselves to Death. New York: Viking Penguin Inc.

Propper, A. M. (1972). The relationship of maternal employment to adolescent roles, activities, and parental relationships. Journal of Marriage and Family, 34, 417-421.

Resnick, H. (1986). Electronic technology and rehabilitation: A computerized simulation game for youthful offenders. Simulation & Games, 17(4), 460-466.

Rubinstein, E. (1983). Television and behavior: Research conclusions of the 1982 NIMH report and their policy implications. American Psychologist, 38, 820-825.

Selnow, G. W. (1984). Playing videogames: The electronic friend. Journal of Communications, 34, 149-156.

Singer, D. G. (1983). A time to reexamine the role of television in our lives. American Psychologist, 38, 815-816.

Silvern, S. B. (1986). Classroom use of video games. Educational Research Quarterly, 10(1), 10-16.

Surgeon general sees danger in video games. (1982, November) New York Times, p. A-16.

Winkel, M., Novak, D. M., & Hopson, H. (1987). Personality factors, subject gender, and the effects of aggressive video games on aggression in adolescents. Journal of Research In Personality, 21, 211-223.

APPENDIX A

Questions for Children

Questions for children:

1) Are you male___ or female___?

2) What grade level are you___?

3) Is there anyone home when you come home from school?

Yes___ Usually___ No___

4) Do you have a home videogame system?

Yes___ No___

5) Do you play videogames before you go to school?

Yes___ Sometimes___ No___

6) Do you play videogames when you come home from school?

Yes___ Sometimes___ No___

7) Do you ever find videogames more exciting and more fun than being with your friends?

Yes___ Sometimes___ No___

8) Do you play videogames because you have nothing else to do?

Yes___ Sometimes___ No___

9) How often do you win at your favorite videogame?

Always___ Often___ Sometimes___ Never___

10) Is winning the most important thing about playing videogames?

Yes___ Sometimes___ No___

11) How often do you play videogames?

Everyday___ Four days a week___ Once a week___ Twice a month or less___

12) What do you like most about videogames?

Challenge___ Visual effects___ Sound Effects___ Control___

13) What is your favorite videogame?_____

APPENDIX B

Questions for Parents

1) Do you feel children are learning certain skills when they are playing videogames?

Yes___ Sometimes___ No___

2) Do you play videogames with your children?

Yes___ No___

3) Do you feel that playing videogames is a waste of time for children?

Yes___ Sometimes___ No___

4) Should videogames be expanded to teach more defined skills to children?

Yes___ No___

5) How do you feel about computers in general?

Comfortable___ Fairly comfortable___ Anxious___ Scared___

6) Do you have a computer at home?

Yes___ No___

7) Are you a single parent?

Yes___ No___

8) Are you male___ or Female___?

Appendix C

CONSENT FORM

1. Purpose of the Study

The purpose of this study is to aid in the transition of home videogames from toys to tools of learning. Parents' and childrens' feelings and attitudes about videogames will provide valuable insights for the development of future informative and entertaining home videogames.

2. Benefits of the Study

The main benefit of this study is to add to the limited body of research on videogames. This study is unique in that it seeks out the valuable opinions parents and children have about videogames. The most obvious benefit for the participants is that it gives them a voice in the process of research.

3. What You Will Be Asked to Do

Your child will bring home from school a survey questionnaire designed to discover some of your feelings about videogames. Should your child be too young to complete the questionnaire for themselves I would ask that you help them in doing so. All voices

are equally important in this research. It should only take a few minutes to complete the survey, and if for any reason you choose not to answer any question it is your right to do so. You will be asked to send the survey questionnaire and the consent form back to school with your child the following day. This survey is voluntary and you and your child are under no obligation to participate.

4. If You Would Like More Information About the Study

I am a graduate student at Ithaca College and this survey is part of my thesis project. The project addresses the preliminary design of videogames meant to serve as parenting aids. If you have any questions concerning the survey or the study itself please contact George A. Spisak at your convenience at 607-936-9485.

5. How the Data Will be Maintained in Confidence

Since taking part in the survey is on a volunteer basis a collection envelope will be provided, and for a moment the teacher will leave the room when the surveys are collected. This is done to insure that there are no consequences for not participating in the survey. Since half of the survey participants are under the age of eighteen a consent form will have to be signed by

the parent or guardian in order to allow the child to participate in the survey. A separate envelope will be provided for the collection of the consent forms so that complete anonymity will be maintained. This step is taken to insure that the signed consent form and the survey questionnaire can not be matched to see who answered what.

I have read the above and understand its contents. I agree to allow my minor child and myself to participate in this study.

Parent or

Guardian_____Date_____

Student_____Date_____