IMPACT OF EXTENDED VIDEO VIEWING ON COGNITIVE, AFFECTIVE AND BEHAVIORAL PROCESSES IN PREADOLESCENTS

A THESIS

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Submitted by

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DECLARATION

I hereby declare that this thesis entitled " IMPACT OF EXTENDED VIDEO VIEWING ON COGNITIVE, AFFECTIVE, AND BEHAVIORAL PROCESSES IN PREADOLESCENTS'' is an original work done by me for the award of the degree of Doctor of Philosophy in Psychology. I also declare that this thesis or any part of it has not been submitted by me for the award of any degree, diploma, title or recognition before.

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I hereby certify that this thesis entitled "IMPACT OF EXTENDED VIDEO VIEWING ON COGNITIVE, AFFECTIVE AND BEHAVIORAL PROCESSES IN PREADOLESCENTS ''is a record of bonafide study and research carried out by Simerpreet Ahuja under my supervision and guidance for the partial fulfillment of the requirements for the degree of Doctor of Philosophy. The results embodied in the thesis have not been submitted to any other University or Institute for the award of any degree, diploma, title or recognition.

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Dedicated to

My Parents

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Simerpreet Ahuja

ABSTRACT

In recent years, there has been an upsurge of attention regarding the cognitive, social, emotional, and the physiological dangers of video viewing from early childhood to adolescence. Several studies have been conducted related to the content of television messages and its impact on the development of children. The impact of media usage and its influence on developmental functions are carried out on small children, adolescents, and adults and there is paucity of such studies on preadolescents that is considered to be the most critical period in the development of an individual. Researchers believe that preadolescence is a sensitive period during which media has a maximal effect.

The purpose of this thesis was to examine the detrimental impact of video viewing on preadolescents. The investigation specifically focused on difference between the performance of heavy viewers and light viewers. A questionnaire was used to assess children's video viewing habits as well as to categorize them into heavy and light viewers. The selected extreme groups were tested on attention span, visual memory, creative imagination (cognitive processes), emotional quotient, emotional stability (affective processes), sleeping patterns, eating patterns, social relations, hyperactivity and obesity (behavioral processes).

The data was analyzed using ANOVA, 't' test and Chi square. A significant difference was found between the performance of heavy and light viewers. Results indicate that heavy viewers performed poor as compared to the light viewers on all the dimensions studied. In addition, sex differences were also explored. The results are consistent with the formulated hypotheses. It can be construed that prolonged video viewing can have crippling effects on the cognitive, affective and behavioral realms of mind.

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CHAPTER 1
INTRODUCTION

The illustrious hastening of information and electronic media in the past few decades is a basis of profound concern to parents, educators and policy makers. Excessive uses of television and computer consumption have created many psychiatric, emotional, and behavioral symptoms, and attention problems. There has been a great deal of attention on cognitive, social and physiological hazards of electronic media from childhood to adolescence. A large amount of this apprehension has been an origin of conjecture rather than meticulously assembled scientific research data. The research indicates that there are no true experts who can preach the dangers of electronic media. Based on these assumptions the present study is an endeavor to emphasize the detrimental impact of electronic media on growing minds.

This study is inimitable in its approach as it tries to investigate the detrimental impact of video stimulation on cognitive, affective and behavioral processes of preadolescents. There are very few studies to buttress such a wider perspective. Many researchers of television hunted the answer to specific questions about the physical or social hazards of regular viewing without putting their judgments into the perspective of the basic cognitive and emotional capacities of children at different age levels. Therefore, this study is an attempt to rule out this dubious generalization and analyze the impact of video viewing using the experimental method.

Another important focus of the study is the age group i.e. 9-12 years. The research on children's video viewing is still not integrated into the basic field of child study. The literature in elementary education and in child psychology shows that the age roughly from nine until puberty is the forgotten period of childhood. It is a no- man's land as far as research is concerned. In addition, birth to age twelve is an important period for the brain development. An infant operates primarily out of the right side of the brain. He picks up visual clues from his environment, such as the mother's face. He communicates non-verbally and he is a quite emotional creature. As he grows his non-verbal communication recedes and verbal communication becomes his primary means of communicating. This transition from "right" brain thinking to "left" brain thinking is a critical time for mental development. There are very few Indian studies which highlight the fact that children are spending more hours watching TV, computer, video games than conversing to their parents, playing, and discovering their natural environment.

Due to these and many other reasons, it is in dispensable to study this period of development which is contemplated to be a significant one. Children are vulnerable to external stimuli, relationships with peers and family, and society go through distinct changes during this period. And the electronic media fails to provide appropriate mental stimulation and sensory experience which is required at this stage. The nature of electronic media is changing every single moment. Coupled with the New Economic Policy in the 1990s, and the accompanying invasion of the Indian market by American and other foreign companies, private television has brought about many important social changes. In the 1990s, the nature of Indian private television changed in a very significant and dramatic way. Indian television suddenly became much more entertainment-driven, like the Hollywood-produced television series in America. Western programs and Indian-produced programs that transmitted consumerist and material values predominated on the new private television channels. The new television atmosphere was made possible by satellite and cable technology. There are more than 50 round the clock, television networks operating in India in 11 languages. A host of private television networks like STAR-TV, Zee-TV, SONY, CNN, BBC and MTV are broadcasted in different parts of India. Even the relatively demure Doordarshan was forced to change its programming curriculum in order to retain its prevailing market share and its advertising revenues. The programming comprised Western entertainment imports and also Indian-produced serials, talk shows, game shows, and news and current affairs. Urban elites have the expandable income with which to purchase the products and services advertised on television. Results of the study indicate that Indian television advertising is to a large extent, if not predominantly, promoting the values of high-technology and modernization, as well as consumerism (Srikandanth, 1991). Kids today are bombarded with sexual messages and images in all media—television, magazines, advertisements, music, movies and the Internet. Children generally watch television for a longer time than adults. They remain glued to their seats in front of TV screens even when programmes are of no interest to them. In fact, the programmes meant for children are very few, but the children watch all shows even if they meant for adults. The scenes of sex crimes and violence in our films have an adverse effect on children. They begin to regard violent and immoral actions as a part of life and develop an aggressive outlook. The romantic scenes which are frequently depicted in song and dance sequence take the children to a make-believe world. In such films they are indirectly made to believe that by sheer luck and not thought hard work they can become heroes and heroines. Some programmes designed for adults depict

unreal life-styles; all these tend to promote consumerism. Children who watch such programmes intensely develop a false sense of prosperity in a developing country like India. On growing, these children are disappointed and disillusioned. TV takes countless viewers into a world of fantasy and make-believe. The most popular serials like Mahabharat, Ramayan, Buniyad, Sri Krishna, Abhitabh's KBC, Indian Idol, Laughter Challenge of Sidhu, Lil Champ, Buggie Buggie and hundred of others whose TRP may be considered to be the highest among all serials of various TV channels. A study of children's television programmes in Asia, including India, conducted by the Asian Media Information and Communication Centre (AMIC) in the late 1990s revealed the predominance of animation programmes and foreign programming in the fare offered to children by both Doordarshan, India's national broadcaster, and private broadcasters (indigenous and multinational) telecasting to Indian audiences. A 2002 study conducted by the Centre for Advocacy and Research (CFAR), New Delhi, revealed that many children in the city watch as much as ten hours of television a day. In the absence of good children's programming, they watch what the rest of the family does, including many that are not really appropriate for or relevant to young audiences. According to the study, Indian children watch all categories of programmes, across channels and throughout the day up to 11.30 pm on weekdays and even later on weekends. Over 50 per cent of their favorite programmes comprise adult family dramas. This is obviously because there are so few appropriate and good quality programmes for children on Indian television. The impact of television advertising on preschool and elementary school-aged children occurs at multiple levels, including the relatively immediate product-persuasion effects intended by the advertiser, as well as broader and/or more cumulative types of influences that accrue from exposure to large numbers of commercials over time. Singh (1998) in India, and Jensen (1995) in the U.S. found that purchase requests by children are strongly stimulated by commercials or by a friend who has recently purchased a product. Retention of advertisements was high among children (for age group 5-15 years). The dominance of American television due to globalization has a significant impact on Indian private industry. America's sitcoms, soap operas, reality shows, movie stars, fashion trends and music have become staple fare in India. In India, where family ties and values are very strong, the concept of moving out of one's parents' home was alien. However, today, with increased financial independence and popular television that stresses autonomy, it has become increasingly common. American television programming concepts have also had a huge impact on the Indian television scene.

Reality shows are a huge hit with urban Indian viewers. Apart for American reality shows like Survivor and Amazing Race that are very popular, the Indian adaptations of American reality shows have rewritten the history of Indian television programming. India's variation of Who Wants' to be a Millionaire, *Kaun Banega Crorepati*, is one of Indian televisions biggest success stories. It has been the number one show in India with consistently high TV ratings. Indian Idol, a spin-off of American Idol, is yet another success story. From call center pseudonyms to coffee culture, from its influences on fashion to its impact on Indian television programming, American TV has made its presence felt in urban India. There are very few Indian studies highlighting the impact of video viewing on children. Therefore, American studies highlighting the impact of television in America can be beneficial for Indian research. The studies can be replicated in Indian settings which can give a better insight to impact of video viewing. The pondering over how noteworthy the impact of the media is on young children, it is essential to control and manipulate the brunt of video viewing on developing preadolescents. The present study is an attempt to understand the detrimental impact of video viewing on cognitive, affective and behavioral processes of preadolescents and fill the gap in American and Indian literature for better emancipation of the children's development.

Motivation for the study

Indians' inclination towards collective values since ages has created close bond of relationships in the families. The tradition of living in extended families with the built-in "other mothers": grandparents, siblings, nieces and nephews, aunts and uncles, and cousins are valuable in raising children. Families are closely knitted, children and parent share a bond of relationship which makes them dependent on each other. Children look forward towards their parents for major decisions whether it is career, marriage, job or friendship. The other side of the coin is that children are the binding cord of parent's mutual relation, and many marriages are surviving because of children. Both the parents don't want to spoil the life of their kids so they indulge in compromising their lives for them.

It is generally believed that mothers are primary and exclusive guardians of their children's welfare and are held responsible for the times of persecution. When the cause of child's problem is unknown, mothers are the suspect. Such social opprobrium has grown in these times of transition from woman as housewife to woman as equal partner in marriage.

Children grow with multiple attachments. They develop close connections with a network of caring adults which relieve them of isolation, self-abnegation and other dimensions. But the induction of media in the lives of children has diversified the relations. They are attuned to television, computers and other sources which have affected their relations with family, siblings, peers and neighbors. The working parents are unable to give quality time to their children, due to which gap between parents and a child is increasing day by day.

The result is that parents are getting exhausted and self destructive, ruining their marriages and abandoning their children to day care, and so conflicted that they can barely live with themselves. On the other hand, children are getting isolated, desensitized, less empathetic and less attached with their parents.

Today's children and most of their parents are living in the world of media. The massive flow of information, images disseminated by media profoundly shapes what young people think about the world and how they perceive themselves in relation to it. The pervasiveness of the media, and the extent to which their stories permeate family life, peer interaction and the entire process of growing up means that young people today have more vicarious experiences of other people and roles than ever before. The transition from childhood to adulthood is a complex and challenging event. Erikson (1959, 1968) postulated that the successful transition from adolescence to adulthood depends on the formation of a coherent sense of identity, which is not an easy task. The popular media offer attractive avenues to ease the difficult and disturbing tensions of this developmental stage. Every exposure to every media model provides a potential guide to behavior or attitude, a potential source of identification, and whether consciously or not-to define and construct our identities.

This accumulated experience contributes to the cultivation of child's values, beliefs, dreams, and expectations, which shape the adult identity a child will carry and modify throughout his or her life. As Comstock (1993) states, "The influence of the media resides not in affecting how people behave but in what they think about. The media becomes a socio-cultural force not because people are what they see, but because what they see and talk about are important parts of their experience."

At a very young age, children gain most of their self from their parents. Over time, other factors, such as media models, peers, and non-family figures influence identity development. The media play a reciprocal and comprehensive role in the ongoing process of identity development amid young people. It is important to stress that young people

actively use media to define themselves, and media can help children make sense of their lives as a form of self-socialization. Media choices and behaviors “can be a personal expression of adolescent identity development” (Huston, Wartella, & Donnerstein, 1998, p11). It is this tremendously broad range of ways in which media can affect young children’s sagacity of identity that makes this sway so imperative.

The present investigation focuses on children’s development in relation to mass media, with the primary focus on preadolescents. The above mentioned factors motivated the experimenter to endeavor this study. The first step in understanding how media influences the development of children, we need to understand the content of mass media and relevant changes in the cognitive, emotional and social functioning of children.

As while acknowledging the richness of the visual details presented in the aforementioned visual media, there are technically built-in drawbacks. For example, the intense lighting in the computer and TV displays. This highly intense glare and revealing light in one sense plays havoc with the inquisitive mind since little is left to the imagination of the viewing learner. To put it in the words of a famous film maker, "As opposed to the light that reveals all, is the light that conceals. Instead of the shadowless light of the modern television show, it is a light that creates deep shadows. It is a light "that retards the pleasure of consumption of the image" (Khopkar, 2001, p. 14-15). These comments are made in the context of comparing the traditional lighting arrangements made in the context of devotional and divine ambience of a temple, with that of modern lighting technology characteristic of video displays. The former indulges the viewer in interplay of light and shadows which has the capacity to invite and evoke fantasies, and rich imagination to bear upon the understanding of the images. This vivid inner recognition gathered from the physically impoverished visual images, places heightened demands on the cognitive competencies involving memory imagery and powers of reasoning.

Advances in the sciences of cognition have enabled investigators to construe perception as a top-down process where the deep-lying layers of the primal brain parts converge to produce the appreciation of the stimulus impinging on the sense organs. The sense data in any case is far less rich than the representations made out of them. In this sense a strong, intense stimulation can not only numb the senses but may also throttle the emerging unconscious themes and schemas which are the primary inputs to the conscious realization of the articulated thoughts. The cognitive unconscious mind flourishes in the context of subdued stimulation; probably a twilight condition is the most conducive.

There is strong evidence to suggest that creative imagination and memory imagery are highly nourished under subliminal (sub threshold) stimulation levels (Ornstein, 1972). Additional support comes from the work on hypnogogic imagery states (Brown, 1985). All these added together unequivocally emphasize the importance of sensory impoverishment and the facilitatory effect of twilight states in the development of mental forms. Impoverished sensory stimulation is characteristic of not only body states such as hypnogogic and hypnopompic images but also is characteristic of certain temporal junctions in a days time such as twilight.

The interplay of light and shadows throws up immense variety of forms illuminating the inner eye of the beholder to capture and explore unresolved forms, patterns and articulations. It provokes freeplay of imagination and fantasies to enrich and enliven the cognitive realms. The role of fantasy and imagination as essential ingredients of creativity has been well documented by several investigators and commentators (Koestler, 1964; Barron, 1968; Freud, 1947). It is not surprising that these early level of mentation have been found crucial for the generation of novel forms and in creative production in general.

In contrast to the above, television production involves rapid pace of presentation of material with constant intercepting, interruption and shifts in ground levels. Commercial advertisements on television are primarily designed to keep the viewer's attention on the screen. This is accomplished by producers by shifting the sequences rapidly, zoom in and zoom out and suddenly introduce new settings, loud music, new characters, and a variety of special effects. This is a new kind of experience never before a part of the perceptual environment of the child is civilization.

Here then, we confront the major question about this medium. A cognitive analysis suggests that because cognitive processing takes place over time, effective learning and storage of material presented requires some mental replaying and rehearsal with an occasional opportunity to shift one's attention away from the set and reflect on what was seen. If new material is piled up on top of other material, particularly irrelevant contents, no one can intelligently sit and examine information (Wright and Huston, 1983).

This study attempts to examine cognitive, affective and behavioral processes of preadolescents. Children’s attention, visual memory and creative imagination are influenced by the formal features of the television medium. The concern is also about how the powerful visual components of television may create an atmosphere conducive to a pervasive, non discriminating viewing set, as television does not demand as strong an

amount of invested mental effort as does reading and that often it does not therefore, contribute as well as learning or to the experience of personal self efficacy. Changes in television format on the encouragement of children to watch more actively for limited number of hours may enhance their capacity to gain useful knowledge from the medium. The knowledge about special properties of television can teach us about children's processing capacities and can also point the way toward more effective use of the medium to promote learning and prosocial skills. The video viewing displaces the time for other beneficial activities such as play, interacting with others, developing social relations which hampers the emotional and social development. In sum, the growing dependence on technology is allowing each individual to become more and more "self-sufficient". This gained self-sufficiency has allowed the individual to become more isolated and cloistered. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships, emotional stability and emotional quotient.

The research indicates 'children's play' is an essential part of their development which is affected by video viewing. Specialists in child development know that a child's work is his play and it is serious business, much is to be learnt through a child's play. Play involves a critical variety of behaviors that serve important purposes in the child's social, emotional and intellectual development. Viewing television is a not a substitute for playing. Playing is quite a natural thing for young children, to be busy and even noisy. It is quite unnatural for children to be quiet, and this is precisely the behavior engaged in by TV watching children. Children have become increasingly dependent on television and they are less likely to initiate their own activities. It has also affected the very nature of children's play (Singer and Singer, 1976). This has led to emotional instability, lower emotional associations, impaired relations and other behavioral processes such as eating, sleeping, hyperactivity, aggressive behavior etc.

Child care professionalists' report that for many years there has been noteworthy change in children's play especially indoor play. They don't see as much dramatic play as they used to, and not as much imagination, either in verbal expression or in the ways they play or in the things they make (Valkenburg and Van der Voort, 1994).

Others note that there is a greater passivity in their play. The consequence of these and other play patterns are troubling. A publication for the groups for the advertisement of psychiatry states " we suspect that television deters the development of imaginative capacity insofar as it pre-empts time for spontaneous play. Research has shown that

children who stop watching TV do play in way clearly suggesting the use of an active imaginary world. Resuming their viewing, the children decrease this kind of play". (Winn, 1977, P. 117). The primary danger of television appears to be in the behavior it prevents: talking, playing, thinking, using the imagination and countless other activities.

Another important factor about television is that it appears to have been instrumental in bringing about the demise of free time in children's lives. The primary function of free time in children's life is to provide necessary opportunities for reducing their dependence, and developing their separate selves. Having unstructured time is important for children's development. Children who have this time they can manipulate it in their own way and can take important steps in the direction of self discovery. Children from the lower socio-economic groups, whose parents cannot afford the outings and other advantages that money brings are at an increased disadvantage.

Studies indicate that eyes move much less while watching TV than in any other activity in daily living. Loss of eye movement is one significant cause in the drop of literacy, although it is realized that correcting eye movements deficiencies will not produce instant literacy. However, much of what is known about learning to read has been discovered through studies of the eye and its movement and unfortunately, most children spend less time with books than they do with TV (Moody, 1980).

For these and many other reasons, excessive television viewing is a serious handicap to the normal development of young children. Children have a basic need for physical activity, appropriate mental stimulation and sensory experience. Television adversely affects all the three. Parents who give their children free reign of the television, or who use it as a babysitter, are making the set a surrogate parent. The way networks or cable are capable of raising our children, more parents need to seriously examine the role that television should play in their families. Shultz (1986) conducted an informal study on children and reported that ninety percent of boys said they would rather watch their favorite show than spend time playing with their fathers.

Surely, we live in a society that makes a lot of demands on us, but rearing children was never meant to be easy. It takes a lot of effort, hard work, time and attention. If we abdicate this responsibility to media in the form of televisions, computers, video games our children tend to lose appropriate stimuli. As our children deserve better, let us limit the media components in the lives of our children to help them nurture better. Our children deserve the chance to live healthy lives with sufficient stimuli. Therefore, it is

our responsibility to monitor the adverse impact of media and control it before it gets too late for us.

Overview of the research

This extended study as a primary focus, investigated video viewing habits of 1600 children. Further investigation was carried on selected 400 children (200 heavy viewers and 200 light viewers). The creative imagination, visual memory, attention span, emotional stability, emotional quotient, eating, sleeping and general behavioral patterns were measured. The present study demonstrated that extended video viewing is detrimental to the development of preadolescents in the light of different theoretical frameworks.

Research objectives

The present research has three principal objectives:

1. To study the detrimental effects of heavy video viewing (computers, television, video games) on children's cognitive, affective and behavioral processes of preadolescents;
2. To study the difference between heavy and light viewers on cognitive, affective and behavioral variables; and
3. To compare both the sexes (males and females) on different variables.

Research Questions/ hypotheses

The main objective of the study was to analyze the detrimental effects of heavy video viewing (computers, television, and video games) on children's cognitive, affective and behavioral processes of preadolescents. Children spend a considerable proportion of their free time watching media therefore video viewing displaces the time for other more beneficial activities (Singer, & Singer, 2001). Excessively bright, fast moving and flickering visual displays can have inhibitory and suppressive effects. Children's video viewing is governed by the novelty of the visual stimulus, rapid formal features such as movements, visual complexity, acts, pans, zooms which produce an orienting reflex (Huston, & Wright, 1989). Excessive video viewing impairs the development of dendrites and neural connectors which lay the foundation for intelligence and creativity (Jackson, 2004). The video viewing has been found to hamper the growth of frontal lobe which is associated with learning, memory, emotion, and impulse control. Children who play computer and video games excessively have impaired frontal development (Kawashima, 2001). Based on the above premises the following hypotheses for cognitive processes were formulated:

1. Heavy video viewers may show poor span of attention compared to light video viewers;
2. Heavy video viewers may show poor visual memory compared to light video viewers; and
3. Heavy video viewers may show poor creative imagination compared to light video viewers.

The rationale for the following hypotheses stems from the basic goal of cultivation theory. The basic goal of cultivation analysis is to determine the differences in the attitudes, beliefs, and actions of light and heavy viewers. Therefore, cultivation analysis attempts to document and analyze the contributions of video viewing to viewers' conceptions of reality independent of social, cultural, and personal factors (Morgan & Signorielli, 1990, p.17). The following hypotheses were formulated for affective and behavioral processes:

1. Heavy video viewers may show poor emotional stability compared to light video viewers;
2. Heavy video viewers may show poor emotional quotient compared to light video viewers; and
3. Heavy video viewers may show poor behavioral patterns compared to light video viewers.

Significance of the study

The present investigation is unique in its approach in studying the detrimental effects of heavy video viewing on young mind, taking into account the various cognitive, affective and behavioral processes. The early part of this decade saw the emergence of technological sophistication imparting information not only across the globe, but also in distance education, nonformal education and classroom teaching. The advancement of information technology has led to the erosion of human values and moral systems and the excessive childhood involvement with electronic media hinders the brain's social systems.

This study laid emphasis on the detrimental effects of heavy video viewing which can be helpful for parents, teachers and counselors, so that they are able to channelize the potential human resources to the utmost. This can be beneficial for the social development which can help parents to decipher the restrained and not so restrained messages contained in television programming, advertising, and music videos. Parents can use this information in taming the programming appropriate for the children and

understand the need to take the time to watch these programs with their children. As caring for them can imbue our life and life itself, with an immediate importance. Under such right conditions, parenthood does stimulate an unprecedented plenitude, both carnal and spiritual. Many years ago the anthropologist Ruth Benedict (1934) argued that primitive people living under cruel conditions parent cruelly; those living in abundance treat their young tenderly. Therefore, it is essential for parents to give their children the abundant world to nourish.

This study can facilitate policy makers in the formulation of laws regarding video viewing. Although organizations exist to scrutinize the content viewed by children in our country, political interests make legislation and enforcement difficult. Therefore, the attentiveness among parents, educators and policy makers can direct in implementing the legislation in an effective manner.

Another implication of the study is that policy makers can regulate broadcasters to practice the behavior which is in compliance with industry regulations and to ensure media companies to impart the information what is eminent for children. This suggests that the present study is a basis of amelioration for parents, educators, policy makers, counselors which can intensify the establishment of educational curriculum based programming to cater children's needs.

There is no doubt that the major institutions such as the family, schools and religion are the crucial foundations of a child's civic education. The new digital media with their vigorous capacity to slot in dynamic learning, to nurture community and to permit the children to become creators and communicators, instead of just flaccid beneficiaries, should instigate a substantial function in aiding to renovate brooding, energetic and dynamic citizens. It is therefore important to understand the social, cognitive and psychological obstacles that hamper a more careful and intentional use of the medium, so that we can truly augment the worth of this indispensable driving force in children's lives.

Organization of the Thesis

The thesis is presented in six chapters. Chapter One is the introductory chapter providing the background to the research and identification of the key aspects under investigation.

Chapter Two presents review of the literature. This chapter includes studies relating to video viewing; studies relating to impact of video viewing on cognitive, affective and behavioral processes.

Chapter Three highlights the method and design of the thesis. There is a description of the procedure, of the sample being measured, and of the measurement tools used.

Chapter Four provides results of impact of video viewing on cognitive, affective and behavioral processes which were measured both quantitatively and qualitatively.

Chapter Five presents the discussion of results of extended video viewing and cognitive, affective, and behavioral processes of preadolescents.

Chapter Six explicates the summary of the results, presented together with limitations of the study, implications of the research findings, and suggestions for further research and conclusions.

A comprehensive list of references used and appendices related to the research methodology and design completes this thesis.

CHAPTER 2
REVIEW OF LITERATURE

The purpose of this section is to examine scholarly documents dealing with the various development tasks of the children. There has been a great deal of popular attention on cognitive, social and even physiological dangers of video viewing from early childhood to adolescence. Indicators about the child's development profile may optimize opportunities for the child development programmers and stimulate the participant's development.

Video viewing and Cognitive processes

When we speak of child development, we usually mean *some* sort of change, but we are often not clear about the kind of change that we mean (Overton, 1998). At times, we point to quantitative variations among individuals, or refer to simple comparisons of older and younger children. This is what we are doing when we say that "older children are taller than younger children," or "children gradually acquire larger vocabularies." At other times, we talk about transformations within individuals, usually of a qualitative nature. Transformation seems to be what is meant, for example, when we say that "during the preschool years, children become able to tell imaginary stories"- highlighting the fact that they could not do so formerly (Valsiner, 1998). An intellectual advancement in the preschool years is the emergence of a theory of the mind. Young children have been found to acquire early understandings about what the mind is and how it works. They develop theories about emotions, motives and intentions, and knowing and remembering. Piaget (1963) concluded that children do not think or reason like adults: Their thought processes are different not only in degree but in kind as well. Young children make rapid intellectual advancements during the preschool years. They learn to think about objects or people that are not present, and can reflect upon things they cannot see, hear, touch, or act upon. They can imagine objects or people and represent them in make-believe, and can contemplate future events and recall past ones. Young children are not only growing physically during early childhood, but they are also growing mentally. The use of television and other media-such as video, computer programs, and CD material-in infancy and early childhood can have both positive and negative influences on the intellectual and social development of young viewers. The negative effects include reading displacement in the early elementary years and modeling of aggression, restlessness and impulsivity. (Schmidt and Anderson, 2007 pp. 77-78). Clearly more research is needed in this area,

but some of the concerns about excessive amounts of “screen time” and the potential influence on infants and young children are highlighted here.

Attention span

Attention span is the amount of time a person can concentrate on a single activity. The ability to focus one's mental or other efforts on an object is generally considered to be of prime importance to the achievement of goals.

According to Penguin Dictionary of Psychology (2004), Attention span is the number of objects or separate stimulus elements that can be perceived in a single short presentation. It is the amount of time that a person can continue to attend to one type of input.

Video viewing and attention span

The ability to mentally focus, attend and sustain concentration over a period is an internal process, which is essential for the development. Healy (1991) in her book "Endangered mind" explained "a 'good' brain for learning develops strong and widely spread neural highways that can quickly and efficiently assign different aspects of a task to the most efficient system, such efficiency is developed only by active practice in thinking and learning which in turn, builds increasingly stronger connections. A growing suspicion among brain researchers is that excessive television viewing may affect the development of these kinds of connections.

It is said that a mature attention span comes with a mature brain. As children develop, those wide spread neural pathways also develop control and focus of higher critical level like attention span. Recent research at the National Institute of Mental Health conducted by Jensen (1997) concluded that extensive exposure to television and video games may promote development of brain systems that scan and shift attention at the expense of those that focus attention.

To several parents and teachers it is not a new revelation. In innumerable homes class rooms we see children with more impulsive behaviors, less willing and able to persevere through challenging mental tasks, proactive, hyperactive with little or no impulse control. Research confirm that children who watch TV or Video Games for more than two hours daily are more likely to exhibit one or more of these characteristics.

DeGaetano (1997) provides some guidelines by which the normal attention span can be developed: Children under the age of 12 need much more time doing than viewing. The concentration and attention skills can be developed through concrete experiences in the 3-D world. If these activities are more self-directed, there can be more opportunities for the attention span to develop. Time spent on 2-D world of TV and video should be

limited ideally to 5-7 hours a week. Secondly, children should be provided with mental challenges with the help of questions, materials for play, which will require child's attention. A puzzle instead of a video game, a trip to an art museum instead of a movie, sometime an aquarium for the child's bed room instead of a TV, are some of the gifts which will ensure healthy attention span. Thirdly, we should not fill children's time every minute. In order to develop ability to concentrate, youngsters must be left alone to develop ingenuity and inventiveness. Fourthly, leisure moments should not be occupied with TV. Story or audio cassettes will be better than TV for nurturing attention span. Lastly, the appropriate choice of TV programs and videos that have a slower pace and mimic real world rhythms will be helpful. Sensational and fast-paced images trigger more reactions than responses and can lead to learning and attention problems later.

Excessive TV viewing at a young age may play role in attention deficit disorder (ADD). There is enough research to support that if we prohibit children under five from viewing TV in significant amount will reduce the risk of getting ADD and attention deficit hyperactive disorder (ADHD). Television flickers at an average rate of once every 3.5 seconds. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits. Dumont (2000) suggests:

1. Hyperactive behavior in children is related to the rapidly changing TV images.
2. The changing of images every few seconds program does shorten attention span.
3. The behavior of the hyperactive child represents an attempt to recapture the flickering quality of television.

Frequent video viewing has been found to be associated with the risk for development of attention problems (Johnson, Cohen, Kasen & Brook, 2007). Research indicate that video viewing is negatively correlated with reading ability and other dimensions of academic achievement and the magnitude of co-relation rises sharply after 20 hours per week of viewing (Walberg & Haertal,1992; Winn,1985; Koolstra & van der Voort,1996). The novelty of the visual stimulus, rapid formal features such as movements, visual complexity, acts, pans, zooms produce an orienting reflex that governs the children's video viewing (Huston & Wright, 1989). Research confirm that children who watch TV or play video games for more than two hours daily are likely to exhibit more impulsive behaviors, less willing and less able to preserve through challenging mental tasks. This leads to an underdeveloped attention span and concentration, and

sustained attention that can become more and more fragmented, eventually disappearing (DeGaetano, 1998)

Television not only hampers concentration but it also creates problems with memory. This is because television creates a sense of urgency and panic, forcing the mind to forget everything else and focus all attention on the images on television. Television viewing has been described as a one-way experience in which the viewer takes in sensory material and gives back little or none (McGinnis, 1991). According to Dunn (1994), Children of today tend to be passive learners that process information uniquely because of television viewing.

Lack of concentration associated with increased television viewing can better be explained because of sleep deprivation caused by extensive viewing rather than the content of the programming (Chevallier & Mansour, 1993).

Developmental studies (Klenberg, Korkman & Nuuttila, 2001) have provided convincing evidence that attention and executive functions are developmental beginning in infancy and continuing through adolescence. Rapid changes in attention tasks occur between the ages of eight and ten but become more gradual between the ages of ten and thirteen. On a subtest of auditory attention, the level of a twelve-year-old is attained at about ten years of age.

Internet is associated with declines in social involvement and the psychological well-being. Recent surveys have documented the association between heavy video viewing and negative emotional consequences such as depression, anxiety and posttraumatic stress (Singer, Slovak, Frierson, & York, 1998). The longer hours of watching television with its heightened audio-visual stimulation and rapidly shifting images is clearly affecting the attention span (Unnikrishan & Bajpai, 1996). Adolescents who viewed television for a longer time (>4 hours) had poor scholastic performance and overall adjustment scores (Ray & Malhi, 2003).

Memory

Memory is an organism's ability to store, retain, and subsequently retrieve information. It is the retention of, and ability to recall, information, personal experiences, and procedures (skills and habits). According to Schacter (1996) Memories are constructions made in accordance with present needs, desires, influences, etc, which are often accompanied by feelings and emotions. It usually involves awareness of the memory.

Britannica Encyclopedia (2005) defines memory as power or process of recalling or reproducing what has been learned or experienced.

Types of memory

Sensory memory

The sensory memories act as holding area for stimuli received through the senses. A sensory memory exists for each sensory channel: iconic memory for visual stimuli, echoic memory for aural stimuli and haptic memory for touch. Information is passed from sensory memory into short-term memory by attention, thereby filtering the stimuli to only those, which are of interest at a given time.

Short-term memory—closely related to "working" memory—is the very short time that you keep something in mind before either dismissing it or transferring it to long-term memory. Short-term memory is shorter than you might think, lasting less than a minute. It allows us to remember the first half of a sentence we hear or read long enough to make sense of the end of the sentence. It has subdivisions like a space-visual register for mental images and phonological loop for the verbal elements. Its capacity is also very limited. Miller (1956), when working at Bell Laboratories, conducted experiments showing that the store of short-term memory was 7±2 items.

Long-term memory is anything you remember that happened more than a few minutes ago. Long-term memories are not all of equal strength. There are two types of long-term memory: episodic memory and semantic memory. Episodic memory represents our memory of events and experiences in a serial form. It is from this memory that we can reconstruct the actual events that took place at a given point in our lives. Semantic memory, on the other end, is a structured record of facts, concepts and skills that we have acquired. The information in semantic memory is derived from that in our own episodic memory, so that we can learn new facts or concepts from our experiences.

Memory and video viewing

Video viewers have limited capacity as information processors. Many aspects of television's content and structure have been shown to alter capacity allocation (Lang, 1993; Lang, Geiger, Strickwerda, & Sumner, 1995). Technological advances have transformed our experience of time and space over the centuries and have fundamentally altered the constitution of collective memory. The media continuously pervade time and space which limits our memory (Rose, 1993). Television can be said to be an attractor that collapses memory and history into its real time void (Urry, 2002). Research also shows that attention levels do not remain constant during viewing of a message; attention

frequently varies both between and within programs, individuals, and situations. In particular, attention levels during viewing of a single message have been shown to fluctuate predictably as a function of a television message's structure and content (Lang, 1995; Reeves, Thorson, & Schleuder, 1985; Reeves & Thorson, 1986; Reeves, et al., 1985). This research has demonstrated fairly convincingly that exposure to a message is not a guarantee of attention. Even among "attentive viewers", attention level varies over the course of a viewing session.

Recent research suggests that a similar situation exists for the relationship between attention and memory. Early research often inferred attention by measuring memory - making the assumption that if viewers remembered something then they must have paid attention to it, and if they did not remember something, it was because they had not paid attention to it (Grimes & Meadowcroft, 1995). However, it now appears that many types of television messages elicit quite high levels of "attention" and quite low levels of memory for the content of the message (Gunter, 1987; Thorson, Reeves, & Schleuder, 1985, 1986).

Using the limited capacity approach to television viewing to analyze the relationship between TV's form and content and viewers' attention to and memory for television messages, Lang and her colleagues have shown that many aspects of television can create states of high attention, which result in poor memory for television messages (Lang, Bolls, Potter, & Kawahara, 1999; Lang, Newhagen, & Reeves, 1996). The limited capacity approach to television viewing suggests that when a television message elicits an orienting response, this results in an increase in the allocation of processing resources to encoding the information in the message. Several studies (Lang, 1990; Lang, 1991; Reeves, et al., 1985; & Thorson & Lang, 1992) have demonstrated that the formal or structural features of television (such as cuts, movement, and sound changes) both evoke the orienting response and increase the resources allocated to processing messages. Both Lang et al. (1993) and Geiger and Reeves, (1993) demonstrated that secondary task reaction times (often used as a measure of resources allocated to processing) are slower immediately following both cuts and edits in television messages. At the same time, this research shows an increase in attention and resource allocation elicited by the cut or edit does not lead automatically to an increase in memory for the message.

Imagination

Imagination is the ability to form mental images. It helps provide meaning to *experience* and understanding to knowledge; it is a fundamental facility through which

people make sense of the world, and it also plays a key role in the learning process. Imagination involves the synthetic combining of aspects of memories or experiences into a mental construction that differs from past or present perceived reality, and may anticipate future reality. Generally regarded as one of the "higher mental functions," it is not thought to be present in animals. Imagination may be fantastic, fanciful, wishful, or problem solving, and may differ from reality to a slight or great extent. Imagination is generally considered to be a foundation of artistic expression, and, within limits, to be a healthy, creative, and higher mental functions. (*Gale Encyclopedia of Psychology*, 2001.)

Beres (1960) defined imagination as "the capacity to form a mental representation of an absent object" and delineated it from those similar mental functions that occur in higher animals who "can apprehend and respond to configurations and spatial relationships in a concrete fashion in relation to direct, immediate, sensory stimulation."

Types of Imagination

Learning Imagination is the primary imagination, with this imagination we learn from the accomplishments of others. Creative Imagination comes up with new ideas, it is the foundation of the magnificent advancement humankind has made since it came on to the scene more than forty thousand years ago. In clear- cut stipulations, creative imagination is the process of energetically generating an impression in your mind of something you want to achieve and possessing that image over a period. By determing this mental image frequently in a tranquil and amenable position, one can redesign the software in their mental computer. It is well known by now that we only use 10% of our minds, and the other 90% is the unconscious portion. Creative imagination allows people to strike into this unconscious part of their minds and bind its latent strength (Meyerson, 2006). We use our creative imagination by recreating and experimenting with alternatives and opportunities. It is a place to sense things out and/or prototype what we envisage before we endeavor markedly what we attain. Invigorating creative imagination involves a reiteration of substantially arousing ideas that can be mingled with mental pictures, rumination, and entreaty converged on a foremost aim or resolving a complicated problem, and then conceding the thoughts to enormous intelligence to come up with innovative ideas, amalgamations, and plans. Memory is essentially an expression of imagination. Everyone possesses some imagination ability. In some, it may be highly developed and in others, it may be exhibited in a weaker manner. It manifests in diverse extent in various people. Imagination is not restricted barely to perceiving representations in the mind. It includes all the five senses and the feelings. One can imagine a sound,

taste, smell, a tangible phenomenon or a sensation or emotion. For some people it is easier to see mental pictures, others find it easier to imagine a feeling, and some are more comfortable imagining the sensation of one of the five senses. Training of the imagination gives the ability to combine all the senses. It is suggested that 'Boredom' is the empty space necessary for creativity. TV is responsible for filling a child's leisure moments; due to which the necessary void is never experienced. Additionally, the child's play is often restricted to forms prescribed by adult programmers whose primary objective is to sell toys. With predetermined themes and ready-made playthings, the child is unable to imagine beyond defined dimensions.

Video viewing and creative imagination

Children are bombarded with TV images, and their own ability to form imaginative pictures becomes severely impaired. This process of generating internal pictures is critical to the development of dendrites and neural connectors, which lay the foundation for intelligence and creativity. Studies, which have investigated how TV viewing affects performance in creative problem solving, suggest that excessive viewing may lead to decreased attention, persistence, and tolerance. The displacement of problem solving opportunities also results in a more limited repertoire of creative solutions. Television and video have been shown to discourage reflection, interpretation and depress imagination and creativity. Researchers have advanced contradictory opinions about the influence of video viewing on imaginative play and creativity. Different hypotheses have been proposed on this.

Stimulation Hypothesis

According to this, media enriches the store of ideas from which children can draw when engaged in imaginative play or creative tasks. It has been suggested that educational viewing might stimulate children's imagination, pro social skills (Schmitt, et al. 1997).

Reduction Hypothesis

The reduction hypothesis maintains that television displays a number of structural characteristics that diminishes the development of daydreaming. This hindrance is believed to result from the following occurrences. Television provides viewers with visual stimulation; the viewer does not practice generating his/her own visual images. Television is viewed by many as a source of mindless entertainer. Many television programs have become so full of action and violence that the viewer must remain attentive throughout the course of the program unable to daydream (Singer & Singer, 1981).

There are six types of reduction hypotheses namely the displacement hypothesis, passivity hypothesis, rapid pacing hypothesis, visualization hypothesis, arousal hypothesis and anxiety hypothesis.

Displacement Hypothesis

According to this, children spend a considerable portion of their free time watching television. The television viewing displaces the time for other more beneficial activities (Singer & Singer, 1986).

Passivity Hypothesis

As per this hypothesis, television is the easy medium requiring little mental effort, which leads to a passive "let you entertain me" attitude that undermines children's willingness to use their own imagination in play and creative products as they consume fantasies produced by others. It becomes a passive activity, both mentally and physically (Salomon 1984).

Rapid-facing Hypothesis

According to this hypothesis, the viewer is confronted with images that must be instantaneously processed because scenes are presented in rapid succession and there is little time to process information at their own and this encourages cognitive overload impulsive thinking, hyperactivity, non-effective style of thinking, and shortened attention spans (Anderson, Levin, and Lorch, 1977).

Visualization Hypothesis

This hypothesis attributes the negative effect of television as it presents viewers with ready-made visual images and leaves them with little room to form their own images.

Arousal Hypothesis

This hypothesis state that television promotes hyperactive and impulsive behavior. The arousing quality is assumed to foster a physically active and impulsive behavior. Violent programs can produce intense arousal in children (Zillman, 1991). Exposure to media violence increases aggression because violence increases excitation or “arouses” viewers (Tannenbaum & Zillman, 1975).

Playing violent video games may have even a greater relationship to aggressive behavior than viewing violent television programs and movies because children are actively engaged in the violent video game, not just being passive viewers. In this way, they are more aroused and excited. “Playing a violent video game for as little as 20 minutes causes an increase in aggressive thinking, an increase in aggressive feelings like

anger, an increase in physiological arousal, for example heart rate, an increase in aggressive behavior, and a decrease in prosocial, helping behaviors" (Anderson, 2002).

Media violence has a meticulously resilient impression on young children, who distort fantasy and reality. Most of the older children and adults may consider the unbelievable representation of violence as unreasonable and unrealistic, while the younger children pungently believe that they are true stories. Even from the routine life, we can see that young children are keen to reproduce violent cartoon characters, such as Batman, and superheroes with captivating powers.

Anxiety Hypothesis

This hypothesis provides a plausible explanation for the negative effect of television violence on children's imagination as violence hinders children's imaginative play. The violent programs induce intense fright reactions in children, and high levels of anxiety disrupt fantasy play and creativity (Nobel, 1973).

Disinhibition Hypothesis

Berkowitz (1962) studied another theory called "Disinhibition Hypothesis" which explains that interpersonal aggression will be augmented by certain circumstances: where violence is rewarded, where similar situations are in the current environment, where the environment has a target. This is because the inhibitions against such behavior have been weakened. Children constantly talk about violent programs in school. Gradually they come to accept violence as a way to solve problems. For instance, they are more likely to strike their playmates, argue, squabble class rules and are less agreeable to be patient for what they want. Some theorists argue that the constant media diet of violence desensitizes audiences, that is to say, makes them less sensitive to real human suffering. Young people becoming desensitized to violence means that they gradually come to not be aroused by violent scenes and to not be bothered by violence in general. They believe that children regard screen violence as play or show and with some unknown reasons become "immune" to the horror of violence. Finally, this makes them less sensitive to the pain and suffering of other people. Furthermore, they accept violence as the only way to solve tribulations and disagreements.

Video viewing and imaginative capacities

Studies indicate that television deters the development of imaginative capacity in so far as it pre-empts time for spontaneous play. The primary danger of television appears to be in the behavior it prevents: talking, playing, thinking, using the imagination and

countless other activities. The time spent on electronic media (television, PCs and the Internet) negatively affects the time spent on organized sports and other social activities.

The studies report inverse relationship between heavy television viewing and self-generated imaginative capacities. The pretend play can help children develop important cognitive and emotional skills and can play an important part in building their capacity for self-regulation. It helps the child in dealing with complexity -and novelty of its environment. However, children's play is also affected by television. It affects child's social, emotional and intellectual development. Children have become increasingly dependent on television and they are less likely to initiate their own activities. It has also affected the very nature of children's play (Singer and Singer, 1976).

Imaginative play may lead to specific increases in language usage, imagery abilities, emphatic potential, capacities for self restraint and tolerance of delay, enhancement of the child's acquisition of the distinction between reality and fantasy, and a number of other specific features including the more conflict-resolving or identity-forming features that are so much a part of clinical applications of symbolic play. The exposure to fantasy play yielded longer periods of play in general, more persistence and positive emotionality (Singer, 1993).

Children tend to believe everything they see and hear in the media. For every young child the commercial is like pure information; they cannot distinguish between what is real and what is not (Moody, 1980)

Singer (1981) has reported an inverse relationship between heavy video viewing and self-generated imaginative capacities. Children have become increasingly dependent on media and they are less likely to initiate their own activities and have affected the very nature of children’s play. Heavy video viewing has resulted in the loss of playtime and decreasing imaginative play and reduction in creativity (Valkenburg, 2001). TV viewing also hampers sustained effort and reflection that is required for the process of imagination (Valkenburg & van der Voort, 1994). Television literally prevents neural growth in the developing brains of children. When young children watch too much of television it suppresses the capacity of their brains to develop imagination (Fanning, 2007). Computer use interferes with self-motivation, imagination, creativity, and delay of gratification (Cordes & Miller, 2000).

Some critics would contend that because the internet as well as other “high-tech toys,” such as interactive dolls and pets, are very specific in the ways in which they guide

children's behavior, the exploration of personal identity and alternate roles are diminished and children's imaginations are limited (Kritt, 2001; Cordes & Miller, 2000).

Difficulties Created by the Video Graphic Presentation of Information

Information theorists have noted the following difficulties created by the movement from textually presented information to video graphically presented information. (Harris, 1996). Firstly, video graphics provide no time for analysis**.** Before one image, statement, or idea is analyzed for its completeness, fairness, intent, or impact, another has replaced it. On the other while, reading a book the pace is slow and material is grasped easily. This tracing and retracing is not possible while watching TV or a movie (unless on video tapes). Secondly, movies and news both strongly tend to choose subject matter that has high visual value. The viewers are biased towards visual stimuli, which deter their development. Thirdly people agree with saying that seeing is believing when in reality "seeing is deceiving". Visual 'demonstration' has the ability to bypass the thoughtful mind and appeal directly to the feelings, making manipulations much easier. This increases their non-argumentative persuasion. Fourthly, a visual stimulus is passive as compared to other activities such as reading. Reading a book requires the reader to translate the ink symbols into ideas; suggested images must be generated in the mind from the text. However, the visual information on video presents the images immediately requiring no such creative generator. Reading calls upon imagination, while watching visual media often preludes the imagination. Fifthly, reality is distorted and simplified by video presentation as compared to textual presentation. For example, condensing a heated political debate to a 30-second spot leaves the viewer with little more than reporter's bias as a means of forming a judgment. Lastly, visual presentation is being blamed for reduced attention spans among young people**.** The rapid changing scenes seem to be delaying the responses and reducing attention span.

Television messages can be analyzed in terms of its structure and content. The structure can be defined with respect to light, sound, camera technique, video graphics, slow motion, editing techniques, movement etc. The content can be defined in terms of the genre, humor, emotional, narrative structure etc. According to Lang and colleagues (1996) reported that viewer can be considered as a limited capacity information processor. Different aspects of television message call forth different amount and kind of resource allocation. Television viewing is an interaction between messages content and structure and the viewer's information processing system. It involves encoding, processing and storing the contents of the message. This in turn depends upon the amount

of capacity required by the message to be fully encoded, processed and stored and the amount of capacity allocated by the viewer to the task.

Studies have indicated that the greater the amount of structural features included in the message, especially the pacing is increased, greater the amount of resource allocated to the processing of the message (Kawahara, et. al., 1996).

The resource allocation is done for the encoding of the message (Basil and Lang, 1996). This is found to improve the memory the recognition - for the contents of the message up to a point. When the pacing is too fast, the resource available to meet the demand will be limited and thereby the person performs less well in the recognition tasks. Pacing is manipulated by controlling the number of cuts (changes from one visual scene to another) in a 30-second message. Lang and his colleagues (1993) demonstrated that cuts elicit cardiac orienting responses and increase in the secondary task reaction time in alternative television viewers. It has been demonstrated that pacing increases the arousal level of the person as indicated by self-report and skin conductance (Kawahara et. al., 1996). Increase in the arousal level tends to increase resource allocation to the process of storing information that has already been encoded. When arousing messaging content is given (still slides) or television messages improves viewer's free recall and cued recall for messages but not for the recognition of the messages The repeat exposure to it reduces our emotional response to it, increases acceptance and makes us more tolerant towards any subsequent violence that we see. A study by Drabman and Thomas (1974) clearly shows this. They studied eight-year-olds that watched either a violent or a non-violent video. Shortly afterwards they witnessed a real (staged) fight between two other children. Those children, who had just seen the violent film, did not tell an adult when they saw the fight. This was because they had been desensitized, they had got used to seeing the violence and therefore did not see it as being harmful or unnatural (Gross 1992, p. 457). Cline, Croft and Courrier (1973) who exposed two groups of boys to a violent movie did a similar but more controlled study. The first group had a history of violent television viewing, whilst the other group did not. They found that the first group of children was somewhat less affected by the movies because they were used to experiencing violence and saw it as a part of everyday life. On the contrary to this however, “televised portrayals of violence are ‘cleaned up’ and ‘not true to life’" (Condry 1989, p. 115). If this is therefore true, heavy television viewers should be more sensitive to real violence as they are only desensitized to the fake violence portrayed on television. "Violence on

television teaches children to accept aggressive behavior ‘as a way of life’ and tolerate this behavior" (Van Evra 1990, p. 98).

Affective processes

Emotion and behavior are based on the child's developmental stage and temperament. Every child has an individual temperament, or mood. Some children may be cheerful and adaptable and easily develop regular routines of sleeping, waking, eating, and other daily activities; these children tend to respond positively to new situations. Emotional development and cognitive development occur simultaneously, and there are many connections between them. Erikson (1950) suggested that all human development pass through specific stages of development. Each stage is marked by a specific crisis or conflict between competing tendencies. Only if individuals negotiate each of these hurdles successfully, they can continue to develop in a normal and healthy manner. The media is one of the major cultural forces that influence these stages of development. The explosive growth in new technologies (DVDs, realistic video games, cell phones, pagers and other wireless devices) is responsible for cultural diversity and stereotypes; health-related matters and lifestyle choices, including sexual behavior, drug and alcohol use, nutrition and body image; and other media’s impact on various social-emotional aspects of a child’s development. A bird’s eye view of the literature on TV and emotional development of children, other media technologies are discussed as follows:

Emotional stability

Penguin Dictionary of Psychology (2004) defines Emotional Stability as the state of one who is emotionally mature, whose emotional reactions are appropriate for the situation and are consistent from one set of circumstances to another.

Emotional stability and video viewing

Heavy viewers reported feeling significantly more negative effect during the week than did light viewers. It was concluded that television is often used as a substitute for social interaction and to ward off feelings of loneliness (Kubey & Csikszentmihalyi, 1990)

A study by Moody (2001) examined the relationship between Internet use and loneliness. This finding suggests that people feel the emotional loneliness, such as feelings of emptiness and lack of intimate relationships with a heavy amount of internet use. Internet use can be highly time consuming and can lead to internet addiction (Young, 2004) and limited social interaction with others (Sanders, Field, & Diego, 2000). Television viewing may also affect fearfulness, cognitive skills, and social or racial

stereotypes (Singer & Singer, 2001). Internet is associated with declines in social involvement and the psychological well-being. Recent surveys have documented the association between heavy video viewing and negative emotional consequences such as depression, anxiety and posttraumatic stress (Singer, Slovak, Frierson, & York, 1998). Some research suggests that greater use of the Internet is associated with declines in adolescents' well-being (Kraut et al., 1998), and with weaker social ties (Kraut et al., 1998; Sanders, Field, Diego, & Kaplan, 2000). Frequent Internet users were more likely to report lower levels of attachment to close friends (Mesch, 2001), and frequency of Internet use was negatively related to adolescents' perception about the quality of family relationships (Mesch, 2003). However, other research has not found a link between adolescents' time online and psychological well-being (e.g., dispositional or daffy well-being, loneliness, depression) (Gross, Juvonen, & Gable, 2002; Wastlund, Norlander, & Archer, 2001) as well as aspects of social networks, such as size of local and distant social circles and amount of face-to-face communication (Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002).

Heavy viewing especially of violent programming is innately associated with aggressive behavior in children and adults, but there is also considerable evidence of prosocial learning e.g. cooperativeness, sharing and imaginativeness under specific conditions (Bushman & Huesman, 2001).

Studies have revealed that alterations in sleep schedules can affect the sleep/wake cycle and lead to inadequate sleep. Irregular sleep schedules can also be a sign of a sleep problem. Furthermore, inadequate sleep has been linked to impaired immune function, inability to concentrate, memory deficits, and emotional instability (Bonnet & Arand, 2003). The Home Net study suggests that the introduction of the internet led children to become socially isolated, depressed, and lonely (Wartella, O'Keefe, & Scantlin, 2000).

Emotional Quotient

Emotional intelligence refers to the capacity for recognizing our own feelings and those of others, for motivating ourselves and for managing emotions well in us and in our relationships. Emotional intelligence includes self-control, zeal, persistence, and the ability to motivate oneself. It describes abilities distinct from but complementary to academic intelligence. Many people who are book smart but lack emotional intelligence end up working at low profile jobs than who excel in emotional intelligence skills. No one can yet say exactly how much of the changeability from person to person in life's course

it accounts for, but existing data suggests Emotional Quotient (EQ) can be as potent and at times more potent than Intelligence Quotient(IQ).

In 1920, Thorndike identified the concept of Social intelligence that formulates the roots for Emotional Intelligence. Thorndike defined social intelligence as, "the ability to understand and manage men and women boys and girls – to act wisely in human relations.. Emotional intelligence encompasses social intelligence and emphasizes the effect of emotions on our ability to view situations objectively and thus to understand our selves and other people. It is the ability to sense, understand and effectively apply the powers of emotions appropriately channeled as a source of energy, creativity and influence.

Emotions are the major foundations of human power, aspiration and force, triggering our deepest concern and objective in life and changing them from things we think about, to values we like. The present conditions of an individual are based on his previous incidents and convictions. It depends on the individual either to retort imprudently like a stimulus response machine with an emotion that is outside our control and may be inappropriate and self-defeating or to respond proactively with self-determined responsibility and freedom to choice. Only part of the accomplishment in life is ascribed to mental power. Other qualities trust, integrity, authenticity, creativity, honesty, presence and resilience are classified as Emotional Intelligence.

Daniel Goleman (1995) in his groundbreaking book "Emotional Intelligence" argued that our IQ- oriented view of intelligence is emotional intelligence being the strongest indicator of human success. He defines emotional intelligence in terms of self-awareness, altruism, personal motivation, empathy and the ability to love and be loved by friends, partners and family members. People who possess high emotional intelligence are the people who truly succeed in work as well as play, building, flourishing careers and lasting meaningful relationships. It involves the ability to monitor one's own and other's emotions, to discriminate among them and to use the information to guide one's thinking and actions.

People who posses well-developed emotional skills are also more likely to be satisfied and effective in their lives, mastering the habits of mind, fostering their own productivity, and functioning.

Salovey and Mayer (1990) defined emotional intelligence in terms of being able to monitor and regulate one's own and other's feelings and to use feelings to guide through and action. Emotional Intelligence (EI), often measured as an Emotional Intelligence

Quotient (EQ), describes an ability, capacity, or skill to perceive, assess, and manage the emotions of one's self, of others, and of groups. Bar-On (1997) characterizes EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p. 16). Despite this early definition, there has been confusion regarding the exact meaning of this construct. The definitions are so varied, and the field is growing so rapidly, that researchers are constantly amending even their own definitions of the construct. Up to the present day, there are three main models of EI:

- Ability-based EI models
- Mixed models of EI
- Trait EI model

The ability - based model

Emotional Intelligence (EI) attempts to define EI within the dimensions of the standard criteria for a new intelligence. Emotional intelligence is the ability to perceive emotion, integrate emotion to facilitate thought, understand emotions, and to regulate emotions to promote personal growth.

The ability based model views emotions as persistent foundation of information that help one to make sense of and maneuver the social environment. The model proposes that individuals vary in their ability to process information of an emotional nature and in their ability to relate emotional processing to a wider cognition. This ability is seen to be apparent in certain adaptive behaviors. The model proposes that EI includes four types of abilities

Perceiving emotions - the ability to identify and interpret emotions in faces, pictures, voices, and cultural artifacts- including the ability to recognize one's own emotions. Comprehending emotions represents a basic aspect of emotional intelligence, as it makes all other processing of emotional information feasible.

Using emotions - the capacity to utilize emotions to aid various cognitive activities, such as thinking and problem solving. The emotionally intelligent person can exploit fully upon his or her varying moods, consequently to best fit the task.

Understanding emotions - the capacity to grasp emotion language and to appreciate complicated relationships among emotions. For example, accepting emotions covers the ability to be responsive to trivial variations between emotions, and the ability to recognize and describe how emotions develop in due course.

Managing emotions - the capacity to normalize emotions in both ourselves and in others. Therefore, the emotionally intelligent person can channelize emotions, even negative ones, and direct them to accomplish anticipated objectives.

The Emotional Competencies (Goleman) model

The EI model pioneered by Daniel Goleman spotlight on EI as broad arrangement of proficiencies and abilities that impel managerial accomplishment. Goleman's model delineates four main EI constructs: Self-awareness - the ability to interpret one's emotions and acknowledge their brunt while exercising gut feelings to direct judgments;

Self-management - involves controlling one's emotions, impulses, and adapting to changing circumstances;

Social awareness - the ability to sense, understand, and react to other's emotions while comprehending social networks; and

Relationship management - the ability to inspire, influence, and develop others while managing conflict.

Goleman includes a set of emotional competencies within each construct of EI. Emotional competencies are not innate talents, but rather learned capabilities that must be worked on and developed to achieve outstanding performance. Goleman hypothesized that individuals are born with a general emotional intelligence that determines their potential for learning emotional competencies. Goleman's model of EI has be en criticized in the research literature as mere pop-psychology (Mayer, Roberts, & Barsade, 2008).

The Trait EI model

A theoretical difference between the ability-based model and a trait-based model of EI has been projected (Petrides, et al., 2004, 2007). Trait EI is considered as a constellation of behavioral dispositions and self-perceptions concerning one’s ability to recognize, process, and utilize emotion-laden information. This definition of EI comprises behavioral dispositions and self perceived abilities and is measured by self-report, as opposed to the ability-based model, which refers to actual abilities as they express themselves in performance-based measures.

The trait EI model is broad and includes the Goleman and Bar-On models discussed above. Petrides and his colleagues have criticsed of the ability-based model and the MSCEIT considering that they are based on "psychometrically meaningless" scoring procedures (Petrides, Furnham, & Mavroveli, 2007).

The conceptualization of EI as a personality trait leads to a construct that lies outside the nomenclature of human cognitive ability. This is an important distinction that

in the operationalization of the construct and the understanding of theories and hypotheses that are formulated about it.

Video viewing and emotional quotient

Rubin (1985) argued that TV viewing is often used for companionship or to battle loneliness. Consequently, video viewing may have an obvious impact on how people initiate and maintain interpersonal relationship. Accordingly, Gerbner, Gross, Morgan, and Signorielli (1986) see television as the great common experience. Television causes a culture to become homogenized. This effect is known as cultivation effect.

Due to the high volume use of e-mail, chat rooms, and bulletin boards for interpersonal relationship purposes, considerable interest has focused on this medium. American On-line is said to carry over 13 million e-mail messages daily (Lawe, 1997). Parks and Floyd (1996) report that people are using e-mail and bulletin boards to initiate and develop relationships (Stafford, Kline, & Dommick, 1999). Their data suggest that on-line relationships develop in a similar fashion to those formed in face-to-face interaction. In sum, the growing dependence on technology is allowing each individual to become more and more "self-sufficient". This gained self-sufficiency has allowed the individual to become more isolated and cloistered. The need for social contact, in many cases, is being fulfilled by the media - especially television. Relationships are not being initiated with "real" people, but with the projected, edited, "spun" images the users share on-line. As Shakespeare noted, "all the world's a stage, and all the men and women merely players" (As You Like It. Act ii, Sc. 7). However, unlike the parts that Shakespeare envisaged men and women playing, the computer-aged players may desire to act-out scripts less representative of our humanity.

Matsuda (2001) suggests that the mobile platform has significantly lowered the quality of communication because "consumer related communication" and "brief messaging (just to kill time)" are identified as the main uses of mobile-related communications. The social influence model of technology use, points out "individuals' media perceptions and use are, in part, socially constructed" (Schmitz & Fulk, 1991). The model proposes that people around the user influence the user's perception of the medium, including its usefulness, and that a user's skills and experience of the communication technology facilitate use of the medium (Tanaka, 2001). Computer use can strongly influence the degree to which students collaborate with their peers, which in turn may well influence what and how they learn (Hawkins, 1984). Internet addiction was significantly associated with depressive symptoms and obsessive-compulsive symptoms,

high harm avoidance, low self-directedness, low cooperativeness and high self-transcendence. (Ha, Kim, Bae, Bae, Kim, Sim, etal, 2007). Internet addiction exhibit more impulsivity than controls and have various co morbid psychiatric disorders (Cao, Su, Liu, & Gao, 2007).

Low Internet users, as compared with high users, reported better relationships with their mothers and fathers (Sanders, Field, Diego, & Kaplan, 2000). Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, and Scherlis (1998) reported that heavy use of the Internet is related to the experience of loneliness among users. Stoll (1995) and Turkle (1996) showed that the use of the Internet is likely to result in social isolation. Kraut etal (1998) reported that the use of the Internet is likely to result in an increase in depression and loneliness. For many of the young people the internet has become 'their world' within which different criteria for success can operate. It seems that young people need a 'safety valve' from the demands of their parents and schools and the internet has given them this opportunity. They have created their, so-called, 'own world' on the internet, a place where they can talk freely (Whang, 2002 p 21–25). The effects of media, such as television, video games and movies on family life have also been demonstrated, and these media will affect personal and social development (Huston et al., 1992; Larson, 1995). Watt and White (2000) also postulate that adolescents who tend to socially isolate themselves are at risk of becoming absorbed into the "safe" world of cyberspace, where they can finally interact socially without some of the inhibitors of interacting personally face to face.

Consequences of extensive video viewing in children may include problems of mood, behavior, and learning, and poor health outcomes (Owens, 2004). In an extensive report on children and computers, the' Alliance for Childhood' contended that computers could hamper physical, emotional and intellectual development in children (Cordes & Miller, 2000).

Television is not a substitute for meeting and interacting with real people in real situations. A child cannot develop a sense of self in the absence of contact with others. While viewing, a child is not gaining practice in relating to others, and in constructive interpersonal problem solving. Furthermore, most TV problems are framed in oversimplified, black-white thinking and resolved, often violently, in one hour (less commercial breaks).

Over thirty years, findings have consistently demonstrated that violence on TV correlates with subsequent aggressive behavior. Recent evidence from an extensive

longitudinal study carried out in four different countries suggests there is a sensitive period that begins before age eight when children are especially susceptible to the effects of violence shown on TV. Media critics have frequently proclaimed that television, music, video games, as well as computer games damage children and diminish their social interaction (Smith, 1995).

Behavioral processes

Children are consumers of a variety of media, including computers, video games, print media, videotapes, music, and television. Although television is the most commonly used medium, viewing time varies with age. Concern regarding television's effects on children's social development has been most apparent in the longstanding debate over the link between televised violence and children's aggression, but extends to other areas such as development of stereotypes, understanding and expressing emotions, and problems such as substance abuse and eating disorders. Several overlapping theories offer reasons why television may exert effects. As Urie Bronfenbrenner (2005) states," The primary danger of Television lies not so much in the behavior it produces – although there is danger there - as in the behavior that it prevents: the talks, games, the family festivities and arguments through which much of the child's learning takes place and through which his character is formed. Turning on the television can turn off the process that transforms children into people." The medium of television, although a daily part of most modern lives, remains mysterious in the manner it may influence its audience. The impact of video viewing on behavioral processes is highlighted here:

Video viewing and behavioral processes

Social problems

Excessive television viewing has been associated with many psychiatric symptoms such as aggressive behavior (Johnson, Cohen, Smailes, Kasen, & Brook, 2002) social problems (Ozmert, Toyran, & Yurdahok, 2002) and sleep quality (Owens, Maxim, Mc Guinn, Nobile, Msall. & Alario, 1999). Children who spent a lot of time watching TV had more difficulties in impulse control, task perseverance, and delay of gratification (Kubey & Donovan, 2001). Television viewing may also affect fearfulness, cognitive skills, and social or racial stereotypes (Singer & Singer, 2001). Research indicate that video viewing is negatively correlated with reading ability and other dimensions of academic achievement and the magnitude of co-relation rises sharply after 20 hours per week of viewing (Walberg & Haertal,1992; Winn,1985; Koolstra & van der Voort,1996). Children who are heavy viewers (Over 3 hours per day) show the greatest decline in

reading ability (Reinking & Wu, 1990). According to Singer & Singer (1986), children spend a considerable portion of their free times in watching television.

Research confirms that children who watch TV or play video games for more than two hours daily are likely to exhibit the characteristics like being more impulsive, less willing and able to persevere through challenging mental tasks, hyperactive, reactive with little or no impulse control (De Gaetano, 2004).

Excessive TV viewing at a young age may enhance Attention Deficit Disorder. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits.

Eating behavior

An analysis of advertising during cartoons revealed that two thirds of the ads were for fats, oils, sweets, and high sugar cereals. None of the ads was for fruits and vegetables (Kotz and Story, 1994). Media influence is interfering with normal eating and leading to higher consumption of unhealthy processed food (Ishigaki, 1991). Movies targeted to children have gratuitous images of brand name fast food restaurants. The combination of unhealthy ads with soft drink machines and fast food in school cafeterias, cinema halls have worsen the situation.

Sleeping behavior

Many studies indicate that children are staying up late to watch TV. One reported that children as young as eight were still watching TV at 11:30pm on school nights. Teachers comment that children are too tired and irritable to work well after late night viewing. Sleep is a physical necessity, required to build up the growing organism. It is also a psychological necessity, the prerequisite for dreaming. Yet dreams after TV viewing may be disturbed, with vivid TV images resurfacing and causing nightmares. The number of hours of television watched per day was associated with irregular naptime schedule ad irregular bedtime schedules (Thompson and Christakis, 2005). Lack of sufficient sleep significantly affects learning ad development in children (Wiggs & Stores, 2004). Dworak, Schierl, Burns, & Struder (2007) suggest that television and computer game exposure affect children's sleep and deteriorate verbal cognitive performance, which supports the hypothesis of negative influence of media consumption of children's sleep, learning and memory.

Obesity

Elevated cholesterol and obesity are two of the most prevalent nutritional diseases among U.S. children today. TV viewing has been found to be associated with both of these conditions. Likewise, viewing correlates significantly with between-meal snacking, consumption of advertised foods, and attempts to influence mothers' food purchases. Physical inactivity such as television viewing is a major determinant of the current obesity epidemic (Prentice and Jebb, 1995). Overweight individuals select more energy-dense foods, display enhanced hunger traits with less satiety, and they eat larger more frequent meals (Blundell and Gillett, 2001).

Hyperactivity

Excessive TV viewing at a young age may play role in attention deficit disorder (ADD). There is enough research to support that if we prohibit children under five from viewing TV in significant amount will reduce the risk of getting ADD and attention deficit hyperactive disorder (ADHD). Television flickers at an average rate of once every 3.5 seconds. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits. Dumont (2000) suggests:

1. Hyperactive behavior in children is related to the rapidly changing TV images.
2. The changing of images every few seconds program does shorten attention span.
3. The behavior of the hyperactive child represents an attempt to recapture the flickering quality of television.

Impact of video viewing and other psychological & physical dimensions

Academic achievement

According to several school psychologists in India, excessive TV viewing (Kaila, 2003; Wadkar, 1990) seriously harms the very worldview, academic motivation, social life, and the entire psychic composition of adolescent students. For several years, researchers have been concerned about the possibility that the large amount of time spent in viewing TV has displaced the time that would ordinarily be spent in other activities (Comstock & Scharrer, 2001). The most common activities that were replaced by TV viewing were socializing with friends, participation in community activities, sports, hobbies, sleep, reading, and other household activities (Williams & Hanford, 1986).

Anxiety and depression

Kubey and Csikszentmihalyi (1990) reported that high viewing subjects feel significantly less alert, less active and less challenged when they view television with family than when they are with family and not watching television whereas light viewing subjects reported feeling significantly more active and alert.

Internet addiction entails a ‘‘psychological dependence on the Internet, and is characterized by (1) an increasing investment of resources on Internet-related activities, (2) unpleasant feelings (e.g. anxiety, depression, emptiness) when offline, (3) an increasing tolerance to the effects of being online, and (4) denial of the problematic behaviors’’ (Kendall, 1998, p. 11). The Internet addiction resulted in academic, social, and occupational impairment (Young, 1998).

Aggressive behavior

Lynch, Gentile, Olson, van Brederode (2001) identified significant associations between violent video game play ad aggressive attitudes and behavior. The violet video games have deleterious effects on children ad adolescents (Anderson, 2000).

Effects on Sensory Development

Children who are actively playing will have more opportunity to develop their senses than children passively viewing. By its very nature, TV is an impoverished sensory environment. In a recent study comparing TV viewing with laboratory-simulated sensory deprivation, researchers found that 96 hours of laboratory induced sensory deprivation produced the same effects on the person as only a few minutes of TV viewing. Normal sensory experience is vital to maintaining a balanced state of mind and body.

TV time displaces physical movement and tactile, sensory rich experiences. Television can only stimulate two of the five senses. While watching TV, the brain produces very slow alpha waves that indicate very little stimulation. Television leads to sitting, little communication and little thought (Sparks, 2001). The people who use the Internet for the social function will get relatively more Internet use problems such as the compulsive use, withdrawal, tolerance, time management problem and the interpersonal and health problems and they will exhibit more severe Internet addictive behaviors (Li & Chung, 2006)

There is a negative relationship among people’s Internet use, psychosocial health, and negative outcomes at home and work (Davis, 2001; Monahan-Martin & Schumacher, 2000; Nalwa & Anand, 2003; Young, 1996).

Sight

While viewing, the eyes are practically motionless and `defocused' in order to take in the whole screen. Constant movement is required for healthy eye development. Visual exploration is a prerequisite of seeing, and necessary for developing a sense of depth and perspective. The two-dimensional screen does not facilitate such development The sense of sight is maturing through age 12. Excessive TV viewing, one of the most passive visual activities, can seriously impair a child's observational skills. Viewing affects not only eye mechanics, but also the ability to focus and pay attention.

Hearing

Since TV is more visual than auditory, children's sense of hearing is not being fully exercised. Active listening is a skill that needs to be developed. Children need practice in processing auditory stimulation, making their own mental pictures in response to what they hear. In addition, when TV is constantly on, the sense of hearing is dulled by the persistent background noise.

Sense of wonder

The subtle rhythms and patterns of life's wonders, which can only be appreciated through patient observation and experience, will hold little interest for a child given a steady diet of TV. The fast paced, action-packed, high drama, which is programmed to keep viewers tuned in, does not accurately represent the natural world, yet it is what children come to expect. Real experiences, therefore, cannot compete with TV and the child's sense of wonder is dulled.

Effects on Perceptions of Reality

Heavy TV viewers develop a distorted sense of reality. Most notable may be an exaggerated perception of the prevalence of violence in society, which comes from an overrepresentation of violent acts in programs. (The frequency of violence in children's programs is six times greater than that of adults').

Pervasive sex-role and racial stereotyping further perpetuates a distorted view. A recent census of characters and their occupations depicted in prime time and children's' programs revealed that three times as many men as women appeared on TV, and the most common jobs portrayed were in traditionally male areas.

Video Viewing and brain development

Research indicates that TV viewing hinders the emotional, social and intellectual development of young children. Parents and education tend to focus on the content of children's shows while considering the issue of television viewing. Although this concern

is valid, it actually overlooks the forces at work involved in TV viewing. It is the mere act of watching TV that has profound effects on its viewers which is especially significant regarding pre-school age children. If one has to understand children's cognitive development and how it is affected by TV viewing, one must know that the brain is divided into two hemispheres, and each one performs different task in thinking process. The left side of the brain handles the verbal, logical, reading, writing reasoning and analysis thought processes and is often referred to as the "reasoning" side of the brain. The right hemisphere on the other hand performs the visual, initiative, spatial and emotional thought processes, and is generally labeled as the "emotional" side of the brain (Bronfenbrenner, 1979).

In addition, birth to age twelve is important years for the brain development. An infant operates primarily out of the right side of the brain. He picks up visual clues from his environment, such as the mother's face. He communicates non-verbally and he is a quite emotional creature. As he grows, his non-verbal communication recedes and verbal communication becomes his primary means of communicating. This transition form "right" brain thinking to "left" brain thinking is a critical time for mental development.

Research show that during TV viewing, right brain activity outnumbers left-brain activity by ratio of more than two to one. Scientists also found that the flood of images from the TV has a mind numbing effect as well, which has been measured electronically by a high proportion of alpha brain waves. Alpha brain waves are associated with semi-consciousness and falling asleep. One psycho physiologist attached 40 young viewers to an instrument shut off the TV when the brain was producing mostly alpha waves. Although the children were told to concentrate, only a few could do keep the set on for more than 30 seconds. This finding shows that the left or "reasoning" side of the brain goes dormant while the "emotional" side of the brain is hyperactive during periods of TV viewing. The sad part is that most preschoolers are spending several hours per day in an activity that is shutting down the faculties that are supposed to be stimulating and developing (Dorr, 1986).

Studies indicate that eyes move much less while watching TV than in any other activity in daily living. Loss of eye movement is one significant cause in the drop of literacy, although it is realized that correcting eye movements deficiencies will not produce instant literacy. However, much of what is known about learning to read has been discovered through studies of the eye and its movement and unfortunately, most children spend less time with books than they do with TV (Moody, 1980).

Children's language development is also affected by television. The words and sentences the child absorbs from TV programmes are simpler than the language of books. Books present a broader vocabulary and greater frequency of complex sentences, while incomplete sentences are predominant in TV. In addition to this, television does not offer an interactive experience of language, which is necessary for a child's complete and proper acquisition of language. A child learns to speak by speaking to people, not merely listening to conversation emanating from the television set. He needs to engage in conversation, and even mealtime conversations have been invaded by television. Since talking to someone usually requires response, television can only, at best, talk at children.

Children up to the age of five or six tend to believe everything they see and hear in commercials not to mention TV programmes. For every young child the commercial is like pure information; they cannot distinguish between what is real and what is not (Moody, 1980). For this reason, some countries have made it against the law for advertisement to be directed at children.

Rosemund and Ravenel (2008) pointed out that the "wiring" of the brain (establishing neural pathways) during the formative years appears to be strongly influenced by the child's environment. If a toddler is deprived of the appropriate stimuli, certain areas of the brain may not develop as fully as they could. Many hours of TV each day from three months onwards may limit the intellectual development of the child. The average American child in the crucial formative years of birth through age five watches over 5000 hours of TV. That will be too much for a young child's neurological system.

Both parent child interaction and the child's own experiences during the formative years profoundly affect the development of a child's brain and the degree to which that child will function to her potential. When babies spend waking hours in front of the TV takes away time for parent child interaction and their own playtime, which are very crucial to the development of intelligence and imagination. The time lost from birth through age 5 cannot be made up for in later years. Certain aspects of brain development only occur during certain ages and if a child misses out in some degrees on the appropriate stimuli during that period may be somewhat disadvantage from then on. Parents child interaction and opportunities for the child to experience her own environment and playing with toys stimulates brain development.

Postulates to explain media effects

Social Learning Theory

The observational effect is also called Social Learning Theory. Albert Bandura (1977) used it specifically to explain media effects. Adults and children acquire attitudes, emotional responses and new styles of conduct through "modeling" of films and television. The major premise is that we learn by observing others. Four steps combine a cognitive view and an operant view of learning.

1. Attention—the individual notices something in the environment.
2. Retention—the individual remembers what he notices.
3. Reproduction—the individual produces an action that is a replication of what was noticed.
4. Motivation—the individual is motivated to imitate. Motivation refers to rewards and punishments, i.e. you will not do anything unless you have some reason for doing it.

Rewards and punishments are, considered the determinants that "cause" learning. Bandura considers them as motives. An observer anticipates a reward behavior because somebody else has been so rewarded. The negative motivations, i.e. punishments, are there as well, giving the observer reasons not to imitate someone. Bandura highlighted that punishment in whatever form does not work as well as reinforcement and, in fact, has a tendency to "backfire" on us. Children learn by observing media violence greatly when the media hero commits violent behavior, when the child believes the violent show is telling a real life story, when the aggressor is rewarded for the violent action, when the aggression is portrayed as justified, and when the child focuses his or her attention on the screen (Huesmann, Eron & Dubow, 2003). For example, many media contain messages about cigarettes. When children see actors and actresses smoking on screen and see signs for tobacco products at concerts and sports events, some of them might make a judgment from the messages that smoking makes a person captivating and interesting. Most kids cannot realize the health risks they are facing when they use these products. Teens see many advertisements and they adopt advertised brands into their lives.

Social Cognitive Theory

The socialization process enhances the desire to learn about people and cultures among youth. Bandura (1977; Bandura 1986) explained that virtually all learning resulted from direct or vicarious experience. He wrote, "The more costly and hazardous the possible mistakes, the heavier is the reliance on observational learning from competent

examples" (1977, p. 12). In learning, either through experience or observations, people develop an awareness of appropriate responses in different settings. Those outcomes can be motivations for people to either engage or avoid certain behaviors.

Bandura (1977) explains: Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learnt observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions, this coded information serves as a guide for action. Because people can learn from example … they are spared needless error. (p. 22)

The people who are used as model, those who are perceived to be positively rewarded for the things they do, are recalled better (Bandura, 1977). "The functional value of the behavior displayed by different models is therefore highly influential in determining which models people will observe and which they will disregard" (p. 24).

Modeled behaviors are easy to remember because of the ease of remembering something visually communicated; when someone has developed the capacity to learn observationally, they cannot be kept from learning what they see. Research has shown that adults and children acquire attitudes, emotional responses, and new styles of conduct through television (Bandura, 1977). Some have suggested it takes teaching responsibilities away from parents. Bandura (1977) believed that extensive public exposure to televised modeling, the mass media plays an influential role in shaping behavior and social attitudes. This formulates the foundation for the development of efficacy. With increasing use of symbolic modeling, parents, teachers, and other traditional role models may occupy less prominent roles in social learning. (p. 39) In addition to television's ability to give students social rewards, television can also offer information to a curious viewer. Gunter and McAleer (1997) expanded on the advantages of learning from television. The child may learn about different social and racial groups, different occupations, lifestyles, places, and events that are happening in the outside world. They select the programmes that offer insights into the way people in distant places feel and behave. (p. 20).

Youth can turn to television for information on how to cope with social needs that they are missing from their own environment (Gunter & McAleer, 1997). Television shows other youth dealing with all sorts of situations. It gives youth situations to learn from and model (Bandura, 1977).

Bandura (1986, 1994) wrote about vicarious capability that television possesses. “Much social learning occurs either deliberately or inadvertently by observing the actual behavior of others and the consequences for them” (1994, p. 66). Relationships, values, thinking patterns, humor, acceptable behavior, popularity, traumatic situations, and violence are portrayed through television and vicariously learnt through spectators. Television shows can take viewers on a voyeuristic journey into people’s homes, challenges, relationships, and fears. The insight into people’s lives, viewers can feel better about their own circumstances and learn from the mistakes of those on television. Children believe that television, especially through its dramatic character representations and situations, can offer information applicable to them as it can show them how to interact with other peers and people (Gunter & McAleer, 1997). People are self-reflective and can distinguish between accurate and faulty thinking, therefore, children can identify the appropriate actions. In Bandura’s (1994) words: “In verifying thought by self-reflective means, people monitor their ideas, act on them or predict occurrences from them, then they judge from the results the adequacy of their thoughts and change them accordingly” (p. 64).

Television portrays situations that usually involve some conflict or uncertainty. The child with the help of these stories can learn what to do if that situation arises in his/her life. Bandura (1994) wrote, “People gain understanding of causal relationships and expand their knowledge by symbolically manipulating the information derived from personal and vicarious experiences” (p. 63). This vicarious learning is useful for children in understanding the social environment. Damon (1983) explained that as children change from preadolescents to adolescents, they learn through trial-and error situations. The children who have elder brothers or sisters have an advantage. They have immediate role models whom they have already observed going through similar situations. However, not all children are able to learn from other siblings, so television becomes the next best thing—there are numerous sitcom “sisters” or “brothers” available. Children who have elder siblings can also turn to television as an additional learning source.

Other researchers have previously looked at why people watch television and made connections to the social sciences. The reasons why people watch television include for companionship, to have something to facilitate conversation, for affiliation or avoidance, social learning, or role reinforcement (Lull, 1980). Children refer to televisions shows to clarify what they are saying. Lull (1980) said, “Television examples are used by children to explain to each other, and to their parents and teachers, those real

world experiences, emotions, and beliefs which are difficult to make interpersonally transparent in attempts at verbal communication" (p. 202). Social learning can come through watching television—either the viewer can be taught about suggestions for social interaction or game shows, public television, or network specials can serve as substitute school experiences (Lull, 1980).

Clearly, there is pressure on pre-adolescents to fit in and form relationships. The pre-adolescent and adolescent years are times when children are trying to learn how to act in certain situations they are stumbling upon as they experience the socialization process. The pre-adolescents are experiencing social needs, and one of the primary purposes of media use at this age is fulfillment of those needs. Theories that emphasize content, like uses and gratifications theory, will predict that adolescents will choose televisions shows that have content relevant to their interests and needs because they will glean information from it that will be helpful in their lives (Anderson et al., 2001). Lull (1985) explained: The interpersonal relations and media usages of adolescents reflect the dynamics of their struggle—a search for self-identity and meaning in an increasingly impersonal world and an irrepressible energy that demands change from a resistant environment (p. 209).

Some research has scrutinized the relationship between social identity and television viewing gratification, using the uses and gratifications framework. It has been suggested that people can turn to mediums, like the television, to gain a stronger identification with a social group—in turn, this would construct an affirmative consequence: a social identity gratification. These gratifications are a motivation that results in people selecting the media they believe will help them achieve this social identity. There is a link between a person's identity concerns and television viewing—if the identity gratifications sought are positively met, and then a viewer will continue to seek and use television in a cyclical fashion. He also theorizes the possibility that there may be groups of viewers who seek identity gratifications along with other gratifications such as entertainment or learning (Harwood, 1999).

Children need to learn how to behave in different social situations as they begin the socialization process (Gunter & McAleer, 1997). Social learning theory states that people learn from observance of others (Miller & Shelly, 2000; Bandura 1977) and focuses on the idea of model behaviors. By observing characters (potential role models) and situations on television, children can learn how to act socially—making television a major socializing agent, and consequently it becomes very influential. Because television is so prevalent, children can turn to it to find an idol—with the numerous shows and

characters available; they are bound to find someone they can relate to (Gunter & McAleer, 1997). Bandura (1977) explained that televised modeling is so intrinsically rewarding that it can hold people's attention for long periods. The advent of television has greatly expanded the range of models available to children and adults alike. … people today can observe and learn diverse styles of conduct within the comfort of their homes through the abundant symbolic modeling provided by the mass media (Bandura, 1997 , p. 24–25)

There are no simple answers when it comes to media effects questions—especially in relation to children and adolescents. Familial influences, parental mediation, class, race, gender, self-image—they all can influence the way a child views and interprets a television program. Much of the research and theory covering the topic of adolescents and the media is missing a model of active involvement and development (Ruggiero, 2000). This research seeks to understand how preadolescents interpret television's messages from a social perspective.

Studies often look at the effects of the media in a narrow, negative light—probably because it contributes to more adverse outcomes, rather than positive or prosocial ones (Strasburger & Donnerstein, 1999).

Cultivation effect

The cultivation effect can be defined roughly as follows: television content conveys a truncated version of reality that is likely to reinforce or alter the existing balance of power in society. Like a distorting mirror, television violence cultivates a feeling of strength or vulnerability based primarily upon the social hierarchy that is depicted. In this way, televised violence inhibits social change by stressing that social relations are based on conflict. Television shows the viewer who can do what to whom in order to obtain something (Gerbner, Gross, Morgan, & Signoreilli, 1986).

Heavy watching of television is seen as 'cultivating' attitudes, which are more consistent with the world of television programmes than with the everyday world. Watching television may tend to induce a general mindset about violence in the world, quite apart from any effects it might have in inducing violent behaviour. Cultivation theorists distinguish between 'first order' effects (general beliefs about the everyday world, such as about the prevalence of violence) and 'second order' effects (specific attitudes, such as to law and order or to personal safety). Gerbner and his colleagues (1986) contend that television drama has a small but significant influence on the attitudes, beliefs and judgements of viewers concerning the social world. The focus is on 'heavy

viewers'. People who watch a lot of television are likely to be more influenced by the ways in which the world is framed by television programmes than are individuals who watch less, especially regarding topics of which the viewer has little first-hand experience. Light viewers may have more sources of information than heavy viewers. Judith van Evra argues that by virtue of inexperience, young viewers may depend on television for information more than other viewers do (van Evra 1990, p. 167).

The difference in the pattern of responses between light and heavy viewers (when other variables are controlled), is referred to as the 'cultivation differential', reflecting the extent to which an attitude seems to be shaped by watching television. Older people tend to be portrayed negatively on television and heavy viewers (especially younger ones) tend to hold more negative views about older people than lighter viewers. Most heavy viewers are unaware of any influence of television viewing on their attitudes and values.

Social Identity Theory

Henri Tajfel and John Turner (1986) are among the principal contributors to the development of the social identity theory. Tajfel (1978) defined social identity as "that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p. 63).

Social identity theory helps in understanding the group process and intergroup relations (Capozza & Brown, 2000). It hightlights questions regarding the relationship between the individual and the group. Individuals adapt to various social identities for a number of reasons, including to maintain self-esteem, the self-concept, for impression-management, or even to provide positive social comparison (Mastro, 2003; Reed, 2002; Harwood, 1999).

Hogg and Terry explained, "Social identity processes are also motivated by a need to reduce subjective uncertainty about one's perceptions, attitudes, feelings, and behaviors and, ultimately, one's self concept and place within the social world" (Hogg & Terry, 2000, p. 124). This process involves being able to recognize one's groups membership but also the differences of the group when compared to another group (Maldonado, Tansuhaj & Muehling, 2003).

Early research by Tajfel focused on the interpersonal-intergroup continuum, which evolved into the social identity theory. This continuum stated that interpersonal behavior is conceptualized by an individual's characteristics and personal relationships, whereas intergroup behavior is determined by an individual's respective social category

(Turner, 1996). In other words, social interaction between people varies along the continuum of either interpersonal behavior or intergroup behavior. Different situations of social interaction can very well determine which continuum will be cognitively sought.

According to Hogg and Abrams (1988), social identity theory involves three stages. The first stage occurs when individuals recognize themselves as members of a distinct social group. These groups can range from gender, race, age, sports team affiliation, occupation, and so forth. Maldonado, Tansuhaj & Muehling (2003) found that the groups do not depend on size, the frequency of inter-member interaction, physical contact, systems of role relationships or interdependent goals.

In the next stage, group behaviors and norms that define and differentiate groups from one another are learnt. For example, individuals may attempt to dress and act like members of a particular social group in order to fit in. They will adapt to the group in order to be recognized as an intergroup member. The final stage includes self-stereotyping which involves individuals assigning perceived group norms to him or her. These group norms are shared beliefs within the social group. This is when an individual can socially define him or herself as a member of a particular social group.

Reed (2002) simplified this three-part process by explaining that early in life identification is an unconscious process of imitating referent others who serve as models for beliefs, values, and behaviors. Then, later in life, as one matures, the individual begins to make his or her own conscious choices and uses discrimination among possible identities.

Social identity theory was originally used to address aspects of intergroup categorization associated with large-scale social identities such as race and nations (Reed, 2002). Today, more researchers are applying social identity theory toward the media, especially television. Harwood (1999) explained that individuals use the media to support conceptions of relative positions of in-groups and out groups in society. He also stated that individuals might seek media portrayals that strengthen their identification with a particular social group and/or provide social identity gratifications by making that identification more positive. In other words, media can be used to reinforce an individual's social identity and can make a particular group membership more salient.

Socialization and Development Needs

Socialization is an interactive process where an individual acquires the norms, values, beliefs, attitudes, and language characteristics of a group or culture (Gecas, 1992).The three main goals of this process are: 1) impulse control or the development of

conscience, 2) role preparation and performance, and 3) cultivating sources of meaning and value (Arnett, 1995). The assumption is that junior members (adolescents), in order to adopt the group's culture, learn model behavior from the senior members (or adults) in the group (Tan et al., 1997). During socialization, adolescents acquire the behaviors and beliefs of the social world and culture they live in (Arnett, 1995). Researchers discussed the various developmental needs of children and adolescents. From ages six to eleven, children are challenged with learning how to keep themselves busy in this period and forming self-conceptions (Miller & Shelly, 2000; Damon, 1983). Self-concepts form as they composite a view of themselves through their experiences and evaluations in situations with others—this is also known as self-appraisal (Bandura, 1986). They also desire to learn social skills because they want to adjust at school and form friendship.

The main steps of the adolescent socialization process have been analyzed and compartmentalized; there are various needs that can be fulfilled through television. Erikson (1968) identified different stages youth go through as they develop their personality. Some of them are trust/mistrust, autonomy/shame, doubt, initiative/guilt, and industry/inferiority, identity/ role confusion. Youth seek intimacy as they are going through these stages. Erikson (1977) wrote that through identification comes an intimacy stage, which is a sustained mutuality in affiliations of work, friendship, and love. … Its ritualistic side is a kind of shared narcissism in the form of an elitism of exclusive groups. It must be obvious that exactly that demonstrative display of shared tastes and predilections, of enthusiastic opinions and scathing judgments that so often pervade the conversations and actions of young adults bound in love or work, in friendship or in ideology completes the human form of those instinctive bonds (p. 110)

Youth, twelve to eighteen-years-old, are interested in making long-term friendships and being involved with friendship groups, but sometimes that does not happen. Parasocial relationships occur when viewers believe they have a relationship with a television character or personality (Perse & Rubin, 1989). Children who feel like they are lacking friends or who strongly identify with a television character may develop a parasocial relationship (Gunter & McAleer, 1997). That character can offer stability, familiarity, and self-disclosure to the viewer—all very important characteristics of a friend at a time when making friends are an especially high priority. Identification with selected characters, even if it is not as extreme as a parasocial relationship, is one outcome of television viewing that is believed to mediate the socialization process (Hoffner, 1995).

Youth also think about what career they want to pursue as part of the socialization process. When children are in elementary school they attach themselves to adults—teachers or their friends' parents—and they are curious about those people's occupations; the children want to watch and imitate the people who are in a variety of occupations. In adolescent years, youth struggle with identity and intimacy when they compare themselves to others. At this stage, a sense of inferiority comes in, which could also bring about a sense of unworthiness or self-consciousness (Erikson, 1968). Also at this time, the youth are concerned about how they appear to others. Erikson (1968) explains: They are sometimes morbidly, often curiously, preoccupied with what they appear to be in the eyes of others as compared with what they feel they are, and with the question of how to connect the roles and skills cultivated earlier with the ideal prototypes of the day (p. 128)

According to Erikson (1968) the feelings adolescents experience cause them to look for ideas they can trust and role models who can teach them. He explains that, the youth form groups or cliques who exclude others who are different from themselves, which give them some source of stability and defense against identity loss in a group of loyal peers. Developing an identity can be a difficult process; however, "self identity emerges from experiences in which temporarily confused selves are successfully reintegrated in an ensemble of roles which also secure social recognition" (Erikson, 1968, p. 211). In the adolescent stage, socialization issues may make them more inclined to turn to television than when they are going through childhood or adult socialization (Arnett, 1995). He explains that adolescence is a time when important aspects of socialization are taking place, especially with regard to identity-related issues such as occupational preparation, gender role learning, and the development of a set of values and beliefs (p. 520). Identity formation is one of the most important developmental challenges of adolescences along with the cultivation of a conception of values, abilities, and hopes.

Socialization and television

Television plays a significant role in the socialization of children and researchers have tried to determine the influence television messages have on a person's construction of reality (Hoffner, 1996; Potter & Chang, 1990). However, consideration of developmental factors is rare in many media studies (Arnett, 1995). Though children may believe they are just watching the television for fun, there may be serious message interpretation and social motivations. There are seven principal sources of socialization: family, peers, school, community, the media, the legal system, and the cultural belief system (Arnett, 1995).

Arnett (1995) explained that as a socialization influence, the media tend to be a broad socializing agent, meaning that they promote a broad range of possible role models and different values, beliefs, interests, and personality characteristics. A broad socializing culture encourages individualism, independence, and self-expression, whereas a narrow socializing culture emphasizes obedience and conformity. The media tend to be classified as a broad socializing agent because of the variety of role models, values, and interests that are represented and it is often used in the company of others—especially friends. It is a way to ease social interaction. McQuail (2000) explained that attending to the media is often accompanied by talk about the ongoing experience. The content of the media (news items, stories, performances) provides an object of shared attention for many as well as topics of conversation. Media related talk is especially useful in providing a non-intrusive basis of contact with strangers (p. 400).

Children initially learn what to watch and the amount to watch from their family members (MacBeth, 1996). Families are the main socializing force influencing children's television use and what they learn from it (MacBeth, 1996). The children's environments affect what they use television for and how much they watch—sociocultural factors and parental mediation are also influential. Some scholars claim that television is the third most influential source, behind family and the social environment in which a person resides (MacBeth, 1996).

Arnett (1995) explains that as a source of adolescent socialization, media bear the most similarity to peers. In both cases, adolescents have substantial control over their own socialization, as they make choices about media and peers more or less independently of the preferences of their parents or other adult socializers. (p. 527). The irony of this situation is that as adolescents try to break away from adults and become independent individuals, they often look for peers who are similar to themselves.

Tan, Fujioka, and Lucht, (1997) explained four ways how television could influence an adolescent's socialization. The first is learning about socialization through observation on television. Learning is the first step in the socialization process, and adolescents are able to observe the requirements for socialization through television. Second, youth evaluate the observed event—it is realism, functionality, and the perceived rewards. If the event is perceived as real and the rewards observed are desirable then it will seem functional for the observer. Third, the adolescent internalizes the functional evaluation of the observed event into the observers' own reality. Lastly, the youth will assimilate the socialization requirements if they are perceived to be functional/rewardable

(Tan et al., 1997). Through this process, adolescents can get in the habit of turning to television for socialization.

Connecting with others is a crucial component that can easily come through discussing the latest episode of Spongebob, Squarepants or American Idol. It is easy to talk about media content with strangers and with friends—it is a common tie that millions of people have and can aid the communication/relationship process. Television can also give them objects for social comparison (which then can aid or hinder the formation of self-conception); it can teach them what's socially acceptable and what's not; and it can give them something to talk about with other peers, thus aiding the intimacy process. Interpersonal needs of youth result in various media uses, which produce different outcomes, depending on the user and need sought (Rubin, 1994).

Research involving the collaboration between media effects and adolescent development is still in early stages; until the last decade, communications and journalism scholars conducted almost all the research on adolescents' media use (Arnett, 1995). The literature in this chapter shows that youth have certain needs as they grow older, and that television offers youth situations and experiences that can help fulfill those needs.

Studies focusing on motivations and reasons for children's media use have largely focused on two areas: parental mediation and effects from violent portrayals. Verma and Larson (2002) reported that television use culturally, by examining the use of middle-class Indian youth. They found that this group typically watched television to relax and they often watched with their family, insuring parental supervision (Verma & Larson, 2002).

When watching television with their families, the adolescents studied reported feeling mildly happy, cheerful, and relaxed, with less social anxiety. The researchers reported that television viewing might be displacing adolescents' other activities (Verma & Larson, 2002). Warren and his colleagues (2000) researched different parental mediation strategies—co-viewing, restrictive mediation, and instructive mediation—and the way gender, age, marital status, employment status, and parents' educational background affected parental mediation. They found that co-viewing increased dramatically with adolescents, but the decline in rulemaking and discussion was equally dramatic at that age (Warren et al., 2000).

Carlson and Grossbart (1988) looked at mothers' influences on television use. This study supported that parental styles played a role in determining the way mothers socialize their children about television. The findings of this study confirmed the idea that

children raised in certain socialization environments (parental styles) exhibit different beliefs about the types of television interventions that their mothers support. Another study looked at the way parental co-viewing can affect a child's political socialization. This study suggested that television could be a useful tool for political socialization, although it says that it plays a somewhat complex and indirect role (Austin, Bruce, & Fujioka, 2000)

Larson's (2001) study examined nearly six hundred commercials within children's programming and how they addressed stereotypes and violence. More than 34 percent of the commercials featuring children did include aggression. When girls were present in the commercials, interactions were usually cooperative—girls were also portrayed in primarily domestic settings.

Research on violence has recently focused on children's interpretations of violent acts; one study looked at the difference a child's age made on his or her interpretation of the television violent act (Krcmar & Cooke, 2001). They found that younger children viewed unpunished violence as more justified than punished violence and that older children were somewhat more likely to perceive a violent act as justified if the act was provoked. Research has also been conducted on other types of media in relation to violence and aggression, such as video games (Sherry, 2001). That analysis suggests that there is a correlation between video games and aggression; however, that relationship is smaller than that found for television and aggression games. Another study (Nathanson, 1997) looked at how aggression-promoting effects can be reduced after children watched violent cartoons. It found that increasing children's fictional involvement with the victim of televised violence had a significant impact on children's interpretation of the cartoon.

Other studies have focused on the negative health effects television viewing has on children and adolescents. One study (Bar-on et al., 2001) described the possible negative effects such as aggressive behavior, substance use, sexual activity, obesity, poor body image, and decreased school performance. This study acknowledged there might be potential benefits from viewing some television shows that promote positive aspects of social behavior (Bar-on, et al. 2001). Other studies have looked at how children's perceptions of the world are drawn from television portrayals. Jantarakolica et al., (2002) found that children who watch television more frequently perceive shows and television in general as more realistic. Van Aarle (2000) examined how youth balanced television use and interpersonal relationships; she concluded that today's youngsters are not

antisocial —they prefer real friends to the company of machines. However, television and other electronic media are found to play an important role in youth's lives.

Conclusion

To summarize, much research in recent years has been devoted to the effects of video viewing on many different aspects of childhood development. Journalists and educators who believe video viewing is detrimental to children have authored many articles citing the negative effects. The research carried out in this sphere is mostly on small children, adolescents and adults. There are only very few studies which concentrate on preadolescents which is considered to be the critical period in the development of an individual. The studies clearly indicate that video viewing deters the overall development of children. In the present study, an attempt was made to analyze the detrimental impact of excessive video viewing on cognitive, affective and behavioral processes of preadolescents.

CHAPTER 3
METHODOLOGY

The central purpose of the present investigation was to analyze the detrimental impact of excessive television viewing on cognitive, affective and behavioral development of preadolescents. For every study, it is essential to apply appropriate sampling technique and adopt proper method, so as to achieve the objectives laid down for the investigation. It is more so, especially, when an investigation deals with human beings. Technique is to research, what method is to teaching in a sense that logic is to thinking. In the words of Hillway, "If the scholar cannot clearly describe his method, the chances are that it is too vague and general to yield satisfactory results." The selection of method depends upon the problem selected and the kind of data necessary for its solution.

Design

A 2(sex: male, female) x 2(category: light viewing, heavy viewing) factorial design was used for all the variables studied.

Participants

Preadolescents (boys = 900; girls =700) studying in various public schools of Punjab participated in the study. The age range of participants was 9-12 years with mean age of 11.29 years. A video viewing questionnaire was used to categorize subjects into light and heavy video viewers. Those who viewed less than 12 hours per week were categorized as light viewers and more than 20 hours were categorized as heavy viewers. The participants of medium category, those who viewed video between 12-20 hours (N = 1200) were excluded from the study as the main objective of the study was to compare the extreme categories, heavy and light viewers. The sample of 400 children, 200 heavy viewers and 200 light viewers were selected for the further study. Socioeconomic status, education levels and abnormalities were controlled.

Measures

Video Viewing Questionnaire: **A** Video Viewing Questionnaire was used to select two categories of subjects, light video viewers and heavy video viewers. It consisted of 21 items to elicit the number of hours children watched television and used computer per week. It also contained items to rule out any kind of congenital disorders such as mental retardation, epilepsy etc. The questionnaire was sent to parents to be filled up by them. The light and heavy viewing categories were chosen on the basis of Mean (16.2) and SD (7.92) values of 1600 children who were surveyed to study their video viewing habits. Half standard deviation above the mean and half standard deviation below

the mean were categorized as heavy viewers and light viewers respectively. A t- Test showed that there was significant difference in light and heavy viewing category t (398, N= 400) = 13.07, p <.001)

Digit span task: Attention span was tested by using a digit span task. Subjects were shown visual stimuli using a tachistoscope containing digits varying from 3 to 12 digits. The digits were chosen using random numbers. One second per digit was given while presenting the cards as in for three digits three seconds were given so on till twelve digits, twelve seconds were given. Four trials were given for each stimulus and the subjects reproduced the numbers verbally. The experimenter noted the correct reproduction. Highest value reproduced in each trial was noted and the mean was computed. The mean for all the trials correctly reproduced comprised the digit span score.

Benton Visual Retention Test (BVRT): The form C of Benton Visual Retention Test (Benton, 1992) was used for testing the visual memory. It consists of 10 cards having geometrical designs. Each card was shown for 10 seconds, and after 15 seconds delay the subjects were asked to reproduce the design on a sheet of paper. The number correct score procedure was used for scoring. The examinee's reproduction of each design was judged on all or none basis. If the reproduction contains no errors, it is scored as correct and awarded a score of 1 and if contains any error then a score of 0 was given. The range of possible scores for this form of the test (10 designs) is 0-10 points.

Holtzman Inkblot Technique: The Form A of Holtzman Ink Blot Technique (Holtzman, 1961) was used to measure the creative imagination of children. This form consists of 47 blots out of which 2 are trial blots. During pilot study it was observed that children experienced fatigue when all stimulus cards were used. Therefore half of the cards were chosen in the order of 1.3, 5…….45 (all odd numbered ink blots). Scoring was done based on the Holtzman Ink Blot manual. Movement responses were scored based on the standard procedure of the Holtzman inkblot technique. The total scores for 23 cards comprised the creative imaginative scores. The range of scores for this test is 0-4 points.

Emotional Stability Test for Children (ESTC): The ESTC developed by Gupta and Singh (2005) was used to measure emotional stability of the children. The test comprises of 15 items to be answered in Yes or No options. The maximum possible score of this test is 15. Each item of the test was scored as either +1 or 0. The high score on this test indicates low emotional stability and low sores indicates high emotional stability limit for this test but subjects were asked to complete the test in 15-20 minutes. The maximum possible score of this test is 15. Each item of the test was scored as either +1 or 0. The

high score on this test indicates low emotional stability and low sores indicates high emotional stability.

BarOn Emotional Quotient Inventory: Youth Version (BarOn EQ-i: YV): This inventory was developed by Reuven Bar-On and James D.A. Parker (2006). It is an easily administered self report instrument designed to measure emotional intelligence in young people aged 7-18 years. The BarOn EQ-i: YV is based on the Bar-on model of emotional and social intelligence, which also formed the theoretical basis of the Bar- On Emotional Quotient Inventory (EQ- I; Bar-On, 1997), the most widely used measure of emotional intelligence for adult respondents.

Emotional Intelligence test comprises abilities related to understanding oneself and others, relating to people, adapting to changing environmental demands, and managing emotions. The BarOn EQ-i: YV consists of 60 items that are distributed across 7 scales namely total emotional intelligence, interpersonal scale, intrapersonal scale, adaptability scale, stress management scale, general mood scale and positive impression scale. The BarOn EQ-i: YV is a 4-point Likert type scale. The higher score indicates increased levels of emotional intelligence.

Checklist for Childrens' Habits: The checklist to assess child's day to day eating, sleeping and general behavioral patterns was used. The checklist comprises of 17 items using 4- point Likert scale. The checklist was sent to the parents through the class teachers of the children. The parents were the respondents; they filled the checklist and sent it back to the experimenter. The higher score indicates increased levels of behavioral problems.

Statistics

Descriptive Statistics

The descriptive statistics was carried out:

(a) Mean

(b) SD

Inferential Statistics:

(a) The 2 X 2 ANOVA

(b) Chi square

(c) 't statistics'

Procedure

The experimenter approached the different schools of Punjab and asked the authorities for the permission for data collection in schools after explaining the purpose of the study. The video viewing questionnaire was used to classify the heavy and light viewing categories of the children. The questionnaire was sent to the parents of the children from the age range 9-12 years through different schools. The parents filled up the questionnaire and sent them back to the class teachers of their child. The light and heavy viewing categories were chosen and medium viewers were excluded from the study. Before testing the selected children, the consent letters were sent to parents for seeking permission for further experimental testing. After the informed consent the selected extreme groups were tested on creative imagination, visual memory, attention span, emotional quotient, emotional stability, sleeping and eating patterns, aggressive behavior, hyperactivity and obesity. The subjects were tested on these dimensions with the measures mentioned earlier. The scoring for the collected data was carried according to standardized manuals of the respective tests. The data was analyzed using SPSS (14.0 version). The results are interpreted in the light of different theoretical frameworks.

CHAPTER 4

RESULTS

The investigation was conducted to analyze the detrimental impact of excessive television viewing on cognitive, affective and behavioral development of preadolescents. The results have been discussed under following headings.

Attention Span

The Mean and SD of the attention span (Digit span task) of heavy and light viewers for both boys and girls were computed. Mean and SD values are presented in Table 1. Table 1 and Figure 1 indicate the mean scores for boys and girls in light and heavy video viewing category. Heavy viewers performed poor compared to light viewers.

Table 1

Digit Span scores of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	8.74	8.41	8.57	1.25	1.53	1.40	100	100	200
Heavy	6.92	5.77	6.34	6.9	5.77	1.42	100	100	200
Total	7.82	7.08		1.60	1.91		200	200	400

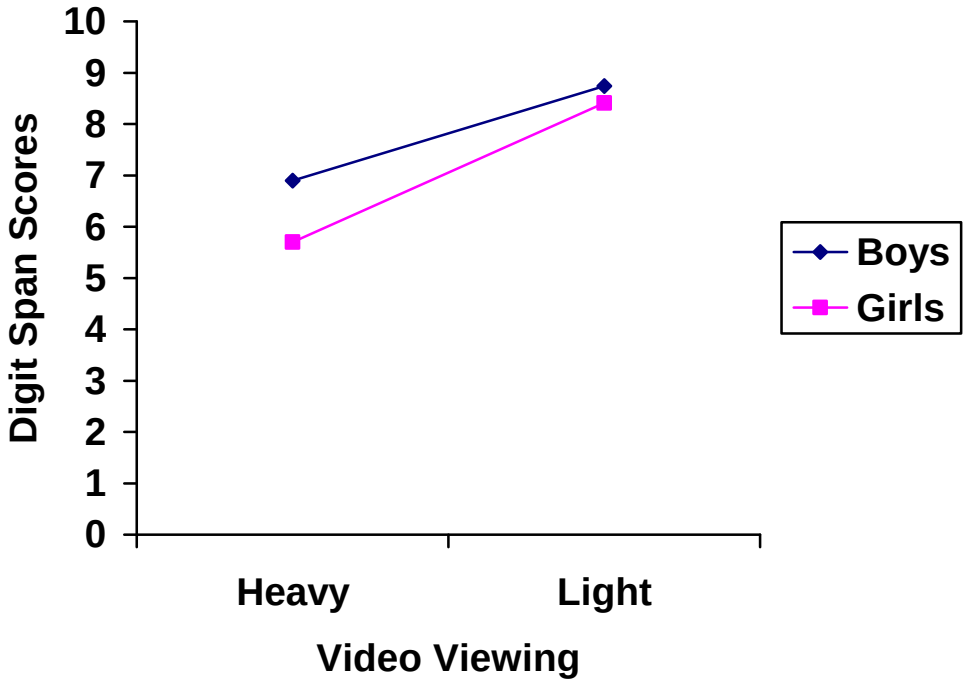
Table 2

ANOVA summary for Attention Span

Source	SS	df	MS	η^2	F
A(Sex)	54.76	1	54.76	0.042	29.84*
B(Video viewing)	498.40	1	498.40	0.38	271.56*
AxB	17.223	1	17.223	0.01	9.38***
Within cell	726.80	396	1.84	0.56	

*p < .0001, *** p <.05

Figure 1 **. Digit span scores of Heavy and Light Video Viewers**



The analysis of variance for video viewing yielded the main and the interactions effects as presented in Table 2. The main effect of sex yielded an *F* ratio of *F* (1, 396) = 29.44, *p* = .001, η^2 = .042 indicating that the mean change score was significantly higher in males (*M* = 7.82, *SD* = 1.60) than in females (*M* = 7.08, *SD* = 1.91). The main effect of category yielded an F ratio of *F* (1, 396) = 271.556, *p* = .01, η^2 =0.38 indicating that mean change score was significantly greater for light viewers (*M* = 8.57, *SD* = 1.40) than for heavy viewers (*M* = 6.34, *SD* = 1.25). The interaction effect was also significant, *F* (1, 396) = 9.38, *p* = .002, η^2 =0.013.

Visual Memory

The Mean and SD of the visual memory scores (BVRT) of heavy and light viewers for both boys and girls were computed. The mean scores for boys and girls for each category are presented in Table 3 and Figure 2. Heavy viewers performed poor compared to light viewers.

Table 3

BVRT scores of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	7.62	7.66	7.64	1.32	1.46	1.39	100	100	200
Heavy	3.98	4.93	4.45	1.62	1.62	1.68	100	100	200
Total	5.80	6.29		2.34	2.06		200	200	400

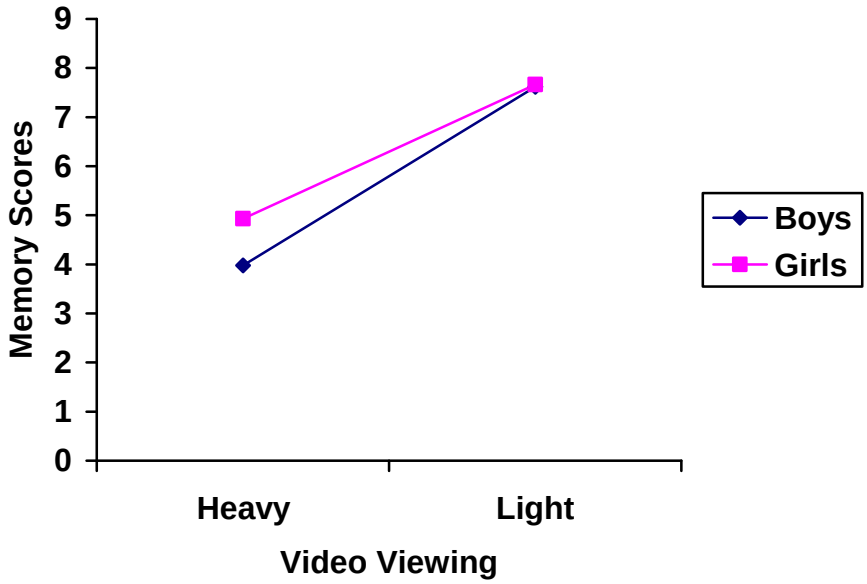
Table 4

ANOVA summary for Visual Memory

Source	SS	df	MS	η^2	F
A(Sex)	24.503	1	24.503	0.012	10.70**
B(Video viewing)	1014.423	1	1014.423	0.515	443.16*
AxB	20.70	1	20.70	0.01	9.04***
Within cell	906.47	396	2.29	0.461	

*p < .0001, ** p <.01, *** <.05

***Figure 2*. Memory scores on BVRT of Heavy and Light Video Viewers**



It is evident from Table 4 that main effect of sex yielded an *F* ratio of *F* (1, 396) = 10.70, *p* = .001, η^2 = .00.012 indicating that the mean change score was significantly higher in females (*M* = 6.29, *SD* = 2.06) than in males (*M* = 5.80, *SD* = 2.34). The main effect of category yielded an F ratio of *F* (1, 396) = 443.16, *p* = .001, η^2 =0.515 indicating that mean change score was significantly greater for light viewers (*M* = 7.64, *SD* = 1.39) than for heavy viewers (*M* = 4.45, *SD* = 1.68). The interaction effect was also significant, *F* (1, 396) = 9.04, *p* = .003, η^2 =0.461.

Creative Imagination

To test the hypothesis on the impact of video viewing on creative imagination the data was analyzed. The Mean and SD of the creative imagination of heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. The mean scores are presented in Table 5 and Figure 3.

Table 5

Creative imagination scores on Holtzman Ink Blot test of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	30.06.	36.58	36.32	7.42	7.81	7.60	100	100	200
Heavy	14.85	15.41	15.13	4.98	5.76	5.37	100	100	200
Total	25.45	25.99		12.35	12.62		200	200	400

Table 6

ANOVA summary for Creative Imagination

Source	SS	df	MS	η^2	F
A(Sex)	29.16	1	29.16	0.00046	.670
B(Video viewing)	44901.61	1	44901.61	0.722	1032.40*
AxB	.040	1	.040	0.000006	.001
Within cell	17222.94	396	43.49	0.277	

*p < .0001

Figure 3. **Creative Imagination scores on Holtzman Ink Blot Test of Heavy and Light Video Viewers**

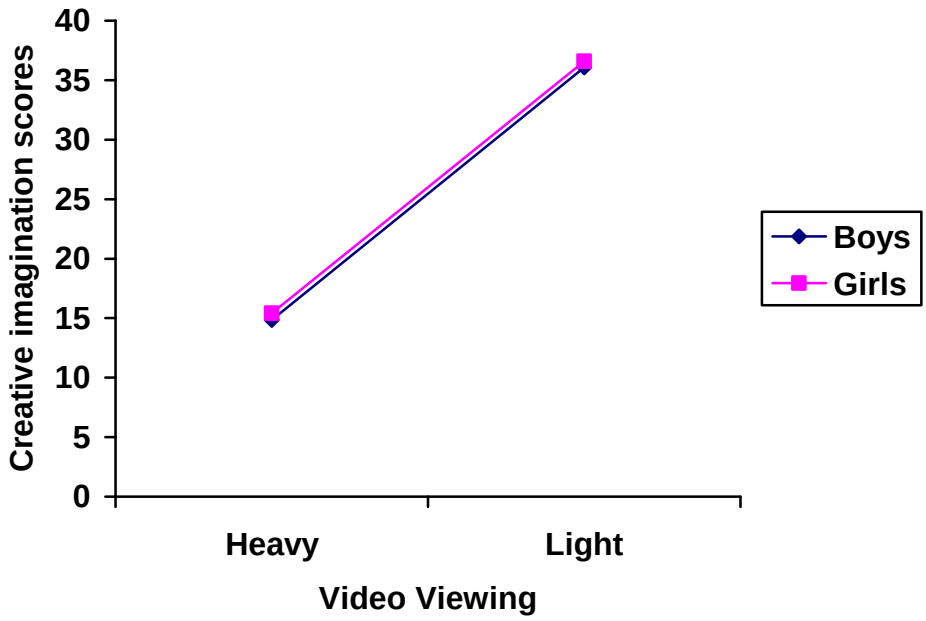


Table 7

ANOVA summary of simple effects for Creative Imagination

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	13.52	1	13.52	0.3108
B2 (heavy viewers)	15.68	1	15.68	0.360
Error term	17222.94	396	43.492	
B (video viewing) at:				
A1 (Boys)	22493.205	1	22493.205	517.118*
A2(Girls)	22408.445	1	22408.445	515.231*
Error term	17222.94	396	43.492	

* $p < .0001$

The analysis revealed the results as presented in Table 6. The main effect of sex yielded an *F* ratio of F (1, 396) = 0.670, p = .413, η^2 = .00046 indicating that there is no difference in mean change score in males (M = 25.45, SD = 12.35) and females (M = 25.99, SD = 12.62). The main effect of category yielded an F ratio of F (1, 396) = 1032.40, p = .0001, η^2 =0.72 indicating that mean change score was significantly greater for light viewers (M = 36.32, SD = 7.60) than for heavy viewers (M = 15.13, SD = 5.37). The interaction effect was non significant, F (1, 396) = .001, p = .976, η^2 =0.277.

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 7. However, the effect of sex was non significant for heavy and light viewers. The effect of video viewing was significant for both the sexes (boys: F (1,396) = 517.118, p= .0001; girls: F (1,396) = 515.231, p =.0001).

Emotional Stability

The Mean and SD of the Emotional Stability of heavy and light viewers for both boys and girls were computed. Mean scores for each category are presented Table 8 and Figure 4. Heavy viewers performed poor compared to light viewers. The higher scores indicate lower emotional stability.

Table 8

Emotional stability scores of boys and girls for light and heavy viewers.

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	6.33	6.29	12.62	1.66	2.07	1.86	100	100	200
Heavy	7.41	6.66	14.07	1.81	2.42	2.11	100	100	200
Total	13.74	12.95		3.47	4.49		200	200	400

Table 9

ANOVA summary for Emotional Stability

Source	SS	df	MS	η^2	F
A(Sex)	15.603	1	15.603	0.009	3.84***
B(Video viewing)	52.563	1	52.563	0.031	12.99*
AxB	12.603	1	12.603	0.007	3.109
Within cell	1605.33	396	4.054	0.952	

*p < .0001, *** p <.05

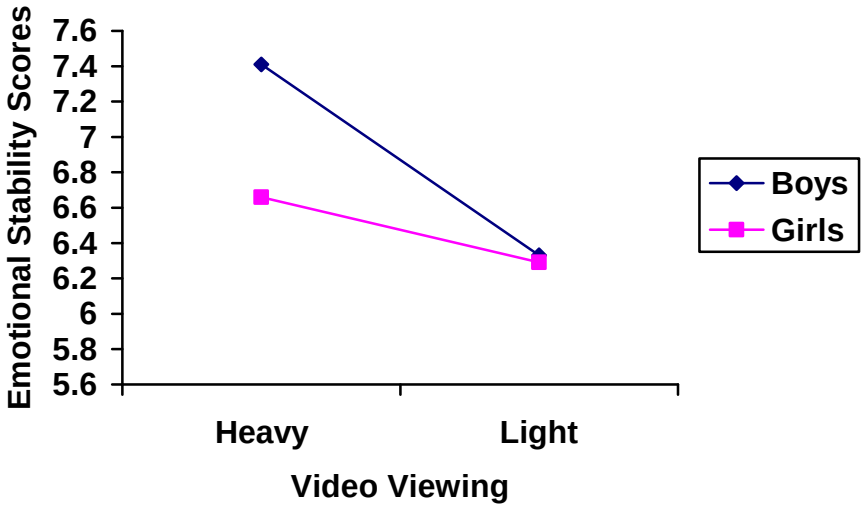
Table 10

ANOVA summary of simple effects for Emotional Stability

ource	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	.08	1	.08	.019
B2 (heavy viewers)	28.12	1	28.12	6.93**
Error term	1605.33	396	1605.33	
B (video viewing) at:				
A1 (Boys)	58.32	1	58.32	14.38*
A2(Girls)	6.84	1	6.84	1.687
Error term	1605.33	396	1605.33	

*p < .0001, **p < .01

***Figure 4*. Emotional Stability Scores on ESTC of Heavy and Light Video Viewers**



Results of 2x 2 factorial design are summarized in Table 9. The main effect of sex yielded an *F* ratio of *F* (1, 396) = 3.84, *p* = .05, η^2 = .009 indicating that the mean change score was significantly higher in males (*M* = 13.74, *SD* = 3.47) than in females (*M* = 12.95, *SD* = 4.49). The main effect of category yielded an F ratio of *F* (1, 396) = 12.99, *p* = .0001, η^2 =0.031 indicating that mean change score was significantly greater for heavy viewers (*M* = 14.07, *SD* = 2.11) than for light viewers (*M* = 12.62, *SD* =1.86). The interaction effect was non significant, *F* (1, 396) = 9.38, *p* = .002, η^2 =0.013.

Results of simple effect ANOVA summarized in Table 10 indicate effect of sex was significant only for heavy viewing category (F (1,396) = 6.93, p<.01) and not for the light viewing category (F (1,396) =0.019). Heavy video viewing had significant effect on boys (F (1,396) = 14.38, p=.001) and not on girls (F (1,396) = 1.687).

Emotional quotient

The Mean and SD of the Emotional quotient scores of heavy and light viewers for both boys and girls were computed. Table 11 and Figure 5 indicate the mean scores for boys and girls in light and heavy video viewing category. Heavy viewers performed poor compared to light viewers.

Table 11

Emotional quotient (Total) scores of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	99.96	100.27	100.11	14.46	15.61	14.82	100	100	200
Heavy	90.06	88.52	89.29	15.20	13.05	14.15	100	100	200
Total	95.01	94.39		15.61	15.33		200	200	400

Figure 5 **. Emotional Quotient Scores on BarOn EQ-I:YV of Heavy and Light Video Viewers**

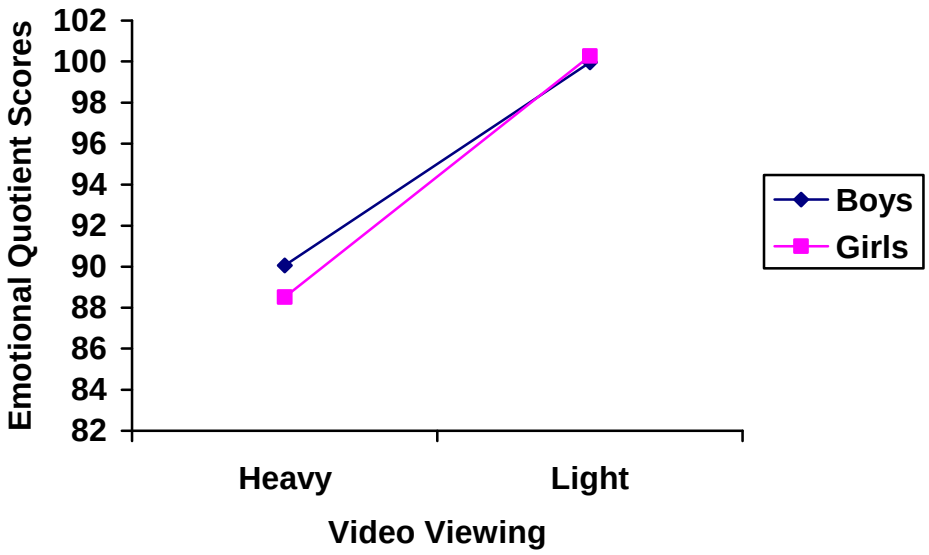


Table 12

ANOVA summary for Emotional quotient

Source	SS	df	MS	η^2	F
A(Sex)	37.82	1	37.82	0.0003	.179
B(Video viewing)	11718.06	1	11718.06	0.122	55.59*
AxB	85.56	1	85.56	0.00089	.406
Within cell	83480.15	396	210.81	0.875	

*p < .0001

Table 13

ANOVA summary of simple effects for Emotional quotient

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	4.805	1	4.805	.0022
B2 (heavy viewers)	118.58	1	118.58	.5625
Error term	83480.15	396	83480.15	
B (video viewing) at:				
A1 (Boys)	4900.5	1	4900.5	23.246*
A2(Girls)	6903.12	1	6903.12	32.746*
Error term	83480.15	396	83480.15	

*p < .0001

The data was analyzed using a 2x2 ANOVA and the results are given in Table 12. It is evident from the table that the main effect of video viewing is significant. The main effect of category yielded an F ratio of F (1, 396) = 55.59, p = .0001, η^2 =.122 indicating that mean change score was significantly greater for light viewers (M = 100.11, SD = 14.82) than for heavy viewers (M = 89.29, SD = 14.15). However the effect of sex (F (1,396) = .179, p =.672, η^2 = .0003) and interaction effect (F (1,396) = .406, p =.542, η^2 = .875) are non significant indicating that there is no difference in mean change score in males (M = 95.01, SD = 15.61) and females (M = 94.39, SD = 15.33).

A simple effects analysis was carried out in order to get further information, the outcomes of which are presented in Table 13. However, the effect of sex was non significant for

heavy and light viewers. The effect of video viewing was significant for both the sexes (boys: F (1,396) = 23.246, p= .0001; girls: F (1,396) = 32.746, p =.0001).

Emotional quotient (Intrapersonal scale)

The Mean and SD of the Emotional quotient (Intrapersonal scale) scores of heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. The mean scores for boys and girls for each category are presented in Table 14 and Figure 6.

Table 14

Emotional quotient (Intrapersonal scale) scores of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	105.77	103.70	105.07	15.37	17.75	16.69	100	100	200
Heavy	102.45	100.84	104.04	10.91	12.34	12.05	100	100	200
Total	104.11	102.27		13.14	15.31		200	200	400

Table 15

ANOVA summary for Emotional quotient (Intrapersonal scale)

Source	SS	df	MS	η^2	F
A(Sex)	338.56	1	338.56	0.003	1.59
B(Video viewing)	954.81	1	954.81	0.011	4.51***
AxB	5.29	1	5.29	0.00006	.025
Within cell	83875.9	396	211.8	0.984	

*** p <.05

Figure 6. **Emotional Quotient Scores on Intrapersonal Scale of Heavy and Light Video Viewers**

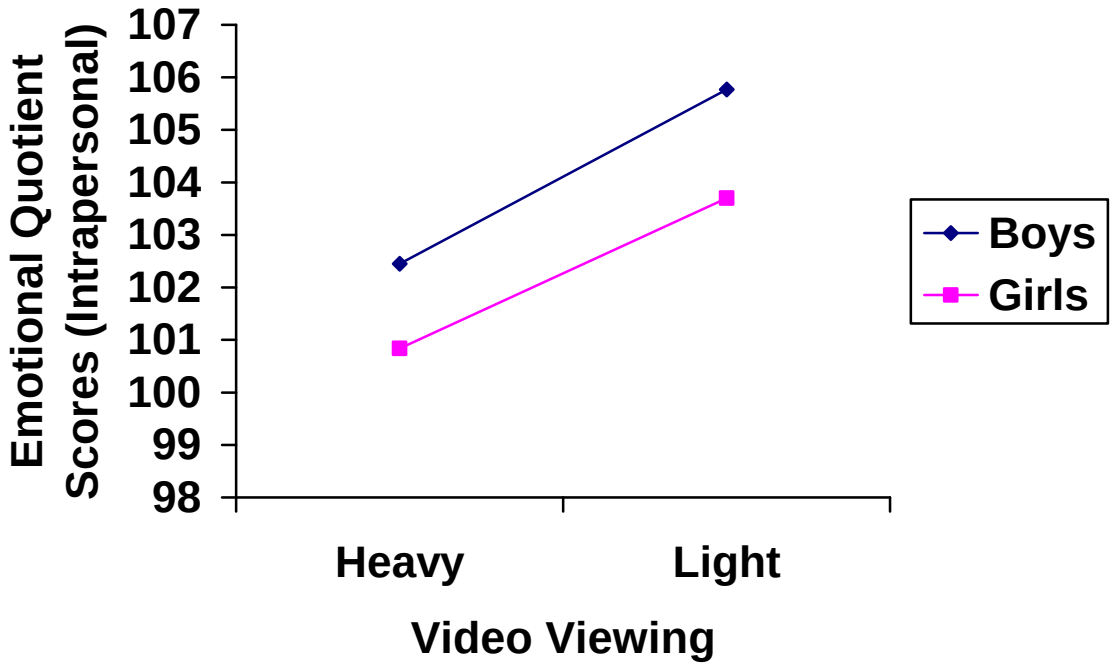


Table 16

ANOVA summary of simple effects for Emotional quotient (Intrapersonal scale)

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	375.38	1	375.38	1.77
B2 (heavy viewers)	2048	1	2048	9.669*
Error term	83875.9	396	83875.9	
B (video viewing) at:				
A1 (Boys)	32	1	32	.151
A2(Girls)	408.98	1	408.98	1.93
Error term	83875.9	396	83875.9	

*p < .0001

The data were analyzed using a 2x2 ANOVA and the results are given in Table 15. It is evident from the table that the main effect of video viewing yielded a significant F ratio (F (1,396) =4.51, p<.05, η^2 = .011) indicating that mean change score was significantly greater for light viewers (*M* = 105.07, *SD* = 16.69) than for heavy viewers (*M* = 104.04, *SD* = 12.05). However the effect of sex (F (1,396) =1.59, p<.207, η^2 = .003) and interaction effect (F (1,396) =.025, p<.875, η^2 = .00006) are non significant. The non significant effect of sex indicates that there is no difference in mean change score in males (*M* = 104.11, *SD* = 13.14) and females (*M* = 102.27, *SD* =15.31).

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 16. The effect of sex was non significant for light viewers and significant for heavy viewers (F (1,396) = 9.669, p= .0001). The effect of video viewing was non significant for both the sexes.

Emotional quotient (Interpersonal scale)

The Mean and SD of the Emotional quotient (Interpersonal scale) scores of heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. Table 17 and Figure 7 indicate the mean scores for boys and girls in light and heavy video viewing category

Table 17

Emotional quotient (Interpersonal scale) scores of boys and girls for light and heavy viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	92.36	93.6	92.98	14.67	14.40	14.51	100	100	200
Heavy	86.43	84.06	85.24	13.30	14.32	13.83	100	100	200
Total	89.39	88.83		14.27	15.10		200	200	400

.

Table 18

ANOVA summary for Emotional quotient (Interpersonal scale)

Source	SS	df	MS	η^2	F
A(Sex)	31.923	1	31.923	0.0003	.159
B(Video viewing)	5983.02	1	5983.02	0.069	29.74*
AxB	325.80	1	325.80	0.003	1.62
Within cell	79663.19	396	201.17	0.926	

*p < .0001

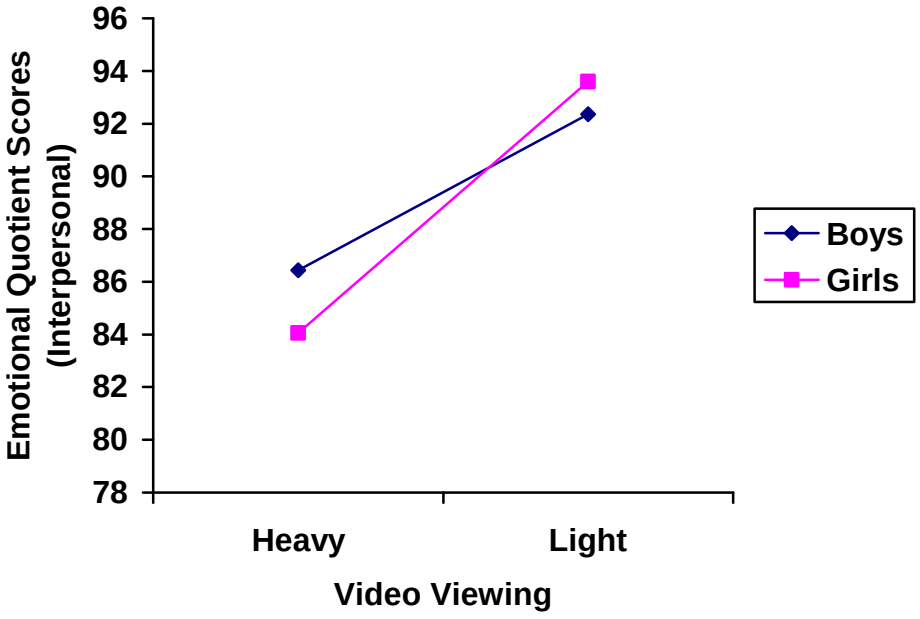
Table 19

ANOVA summary of simple effects for Emotional quotient (Interpersonal scale)

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	76.88	1	76.88	.380
B2 (heavy viewers)	280.845	1	280.845	1.396
Error term	79663.190	396	201.170	
B (video viewing) at:				
A1 (Boys)	1758.245	1	1758.245	8.74*
A2(Girls)	4550.58	1	4550.58	21.65*
Error term	79663.190	396	201.170	

*p < .0001

***Figure 7*. Emotional Quotient Scores on Interpersonal Scale of Heavy and Light Video Viewers**



The analysis revealed the results as presented in Table 18. The main effect of sex yielded an *F* ratio of *F* (1, 396) = 0.159, *p* =.691, η^2 = .0003 indicating that there is no difference in mean change score in males (*M* = 89.39, *SD* = 14.27) and females (*M* = 88.83, *SD* = 15.10). The main effect of category yielded an F ratio of *F* (1, 396) = 29.74, *p* = .0001, η^2 =0.069 indicating that mean change score was significantly greater for light viewers (*M* = 92.98, *SD* = 14.51) than for heavy viewers (*M* = 85.24, *SD* = 13.83). The interaction effect was non significant, *F* (1, 396) = 1.62, *p* = .204, η^2 =0.003.

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 7. However, the effect of sex was non significant for heavy and light viewers. The effect of video viewing was significant for both the sexes (boys: F (1,396) = 8.74, p= .0001; girls: F (1,396) = 21.65, p =.0001).

Emotional quotient (Stress management scale)

The Mean and SD of the Emotional quotient (Stress management scale) scores of heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. The mean scores for boys and girls for each category are presented in Table 20 and Figure 8.

Table 20

Emotional quotient (Stress management scale) scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	89.94	90.79	90.36	13.46	12.43	12.93	100	100	200
Heavy	89.55	88.15	90.52	10.51	11.16	12.44	100	100	200
Total	91.41	89.47		13.40	11.86		200	200	400

Figure 8. Emotional Quotient Scores on Stress Management Scale of Heavy and Light Video Viewers

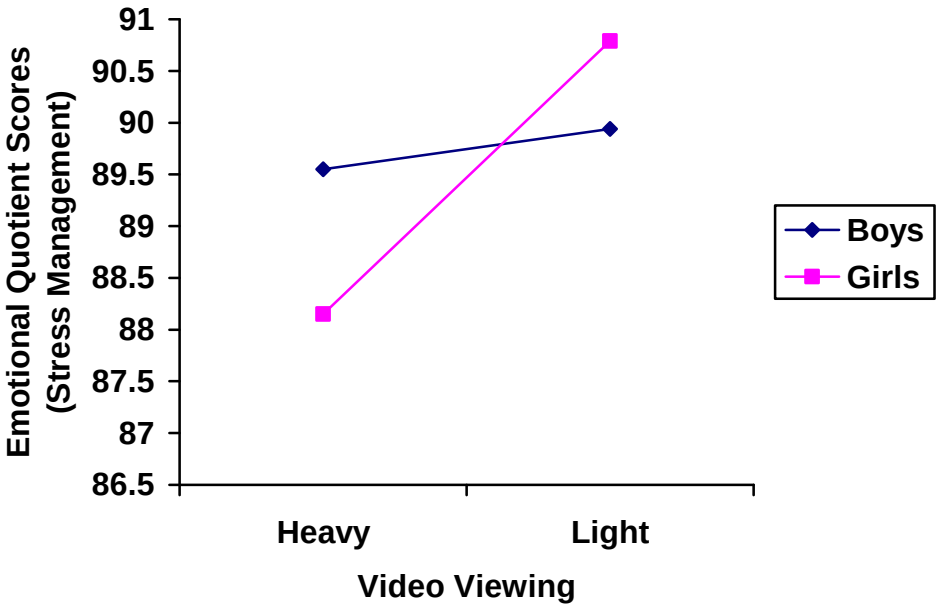


Table 21

ANOVA summary for Emotional quotient (Stress management scale)

Source	SS	df	MS	η^2	F
A(Sex)	7.56	1	7.56	0.0001	.053
B(Video viewing)	229.52	1	229.52	0.004	1.608
AxB	126.56	1	126.56	0.002	.886
Within cell	56541	396	142.78	0.993	

Table 22

ANOVA summary of simple effects for Emotional quotient (Stress management scale)

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	36.125	1	36.125	.253
B2 (heavy viewers)	1123.38	1	1123.38	7.867*
Error term	56541	396	142.782	
B (video viewing) at:				
A1 (Boys)	435.125	1	36.125	3.047
A2(Girls)	348.48	1	1123.38	2.440
Error term	56541	396	142.782	

*p < .0001

Results of 2x 2 factorial design are summarized in Table 21. The main effect of sex yielded an *F* ratio of *F* (1, 396) = .053, *p* = .818, η^2 = .0001 indicating that there is no difference in mean change score in males (*M* = 91.41, *SD* = 13.40) and females (*M* = 89.47, *SD* = 11.86). The main effect of category yielded an F ratio of *F* (1, 396) = 1.608, *p* = .206, η^2 =0.004 indicating that there is no difference in mean change scores for heavy viewers (*M* = 90.36, *SD* = 12.93) and light viewers (*M* = 90.52, *SD* =12.44). The interaction effect was non significant, *F* (1, 396) = .886, *p* = .347, η^2 =0.993.

Results of simple effect ANOVA summarized in Table 22 indicate effect of sex was significant only for heavy viewing category (F (1,396) = 7.867, p=.0001) and not for the

light viewing category (F (1,396) =0.253). The effect of video viewing was non significant for both the sexes.

Emotional quotient (Adaptability scale)

The Mean and SD of the Emotional quotient (Adaptability scale) scores of heavy and light viewers for both boys and girls were computed. The mean scores for boys and girls for each category are presented in Table 23 and Figure 9. Heavy viewers performed poor compared to light viewers.

Table 23

Emotional quotient (Adaptability scale) scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	103.15	101.39	102.27	13.16	15.43	14.33	100	100	200
Heavy	99.15	94.25	96.70	14.92	13.86	14.57	100	100	200
Total	101.15	97.82		14.17	15.06		200	200	400

Table 24

ANOVA summary for Emotional quotient (Adaptability scale)

Source	SS	df	MS	η^2	F
A(Sex)	1108.89	1	1108.89	0.012	5.37***
B(Video viewing)	3102.49	1	3102.49	0.035	15.02*
AxB	246.49	1	246.49	0.003	1.19
Within cell	81800	396	206.56	0.9480	

*p < .0001, *** p <.05

***Figure 9*. Emotional Quotient Scores on Adaptability Scale of Heavy and Light Video Viewers**

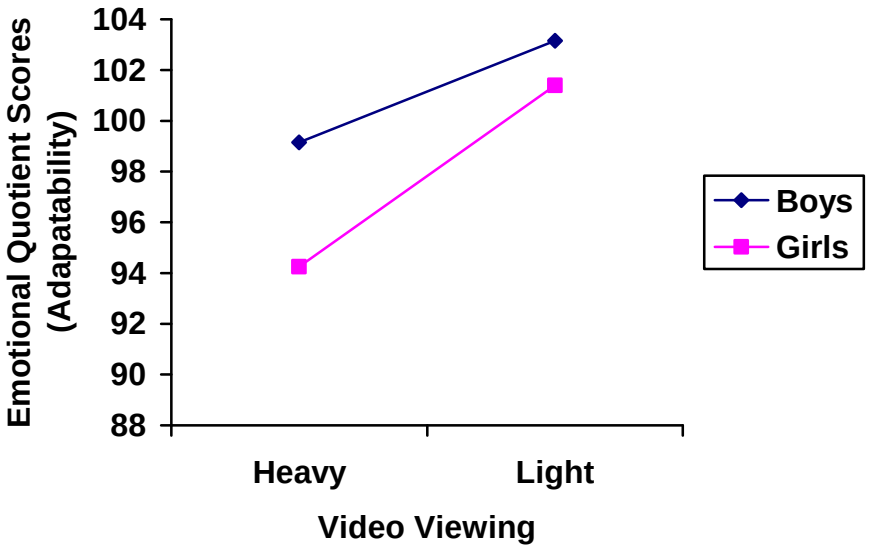


Table 25

ANOVA summary of simple effects for Emotional quotient (Adaptability scale)

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	154.88	1	154.88	.749
B2 (heavy viewers)	1200.5	1	1200.5	5.811***
Error term	81800.04	396	206.566	
B (video viewing) at:				
A1 (Boys)	800	1	800	3.87***
A2(Girls)	2548.98	1	2548.98	12.339*
Error term	81800.04	396	206.566	

*p < .0001, *** p <.05

The data was analyzed using a 2x2 ANOVA and the results are given in Table 24. It is evident from the table that the main effect of video viewing is significant. The main effect of category yielded an F ratio of F (1, 396) = 15.02, p = .0001, η^2 =.035 indicating that mean change score was significantly greater for light viewers (M = 102.27, SD = 14.33) than for heavy viewers (M = 96.70, SD = 14.57). The main effect of sex (F (1,396) =5.37, p =.021, η^2 = .0012) indicating that the mean change score was significantly greater in males (M = 101.15, SD = 14.17) as compared to females (M = 97.82, SD = 15.06). However, interaction effect (F (1,396) = 1.19, p =.275, η^2 = .003) is non significant.

A simple effects analysis was carried out in order to get further information, the outcomes of which are presented in Table 25. The effect of sex was non significant for light viewers and significant for heavy viewers (F (1,396) = 5.811, p= .05). The effect of video viewing was significant for both the sexes (boys: F (1,396) = 3.87, p= .05; girls: F (1,396) = 12.339, p =.0001).

Emotional quotient (General mood scale)

The Mean and SD of the Emotional quotient (General mood scale) scores of heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. Table 26 and Figure 10 indicate the mean scores for boys and girls in light and heavy video viewing category.

Table 26

Emotional quotient (General mood scale) scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	93.61	94.48	94.04	11.42	113.84	12.66	100	100	200
Heavy	90.74	90.05	90.39	13.32	10.55	11.99	100	100	200
Total	92.17	92.26		12.46	12.47		200	200	400

Table 27

ANOVA summary for Emotional quotient (General mood scale)

Source	SS	df	MS	η_2	F
A(Sex)	.810	1	.810	0.00001	.005
B(Video viewing)	1332.25	1	1332.25	0.021	8.718***
AxB	60.84	1	60.84	0.00098	.398
Within cell	60516.74	396	152.82	0.977	

*** p <.05

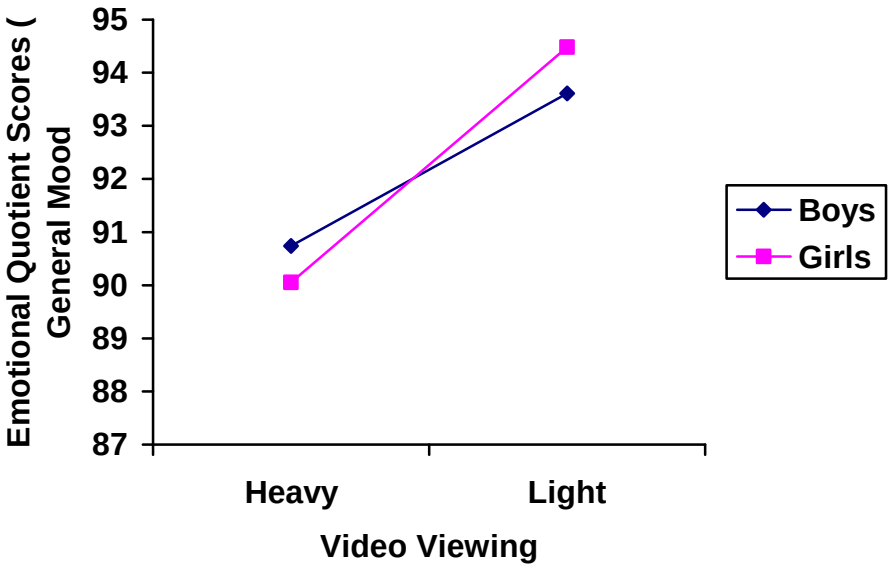
Table 28

ANOVA summary of simple effects for Emotional quotient (General mood scale)

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	37.845	1	37.845	.2476
B2 (heavy viewers)	23.805	1	23.805	.155
Error term	60516.740	396	152.82	
B (video viewing) at:				
A1 (Boys)	411.845	1	411.845	2.694
A2(Girls)	981.245	1	981.245	6.420***
Error term	60516.740	396	152.82	

*** p <.05

***Figure 10*. Emotional Quotient Scores on General Mood Scale of Heavy and Light Video Viewers**



The analysis revealed the results as presented in Table 27. The main effect of sex yielded an *F* ratio of *F* (1, 396) = 0.005, *p* =.942, η^2 = .00001 indicating that there is no difference in mean change score in males (*M* = 92.17, *SD* = 12.46) and females (*M* = 92.26, *SD* = 12.47). The main effect of category yielded an F ratio of *F* (1, 396) = 8.718, *p* = .003, η^2 =0.021 indicating that mean change score was significantly greater for light viewers (*M* = 94.04, *SD* = 12.66) than for heavy viewers (*M* = 90.39, *SD* = 11.99). The interaction effect was non significant, *F* (1, 396) = .398, *p* = .528, η^2 =0.00098.

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 28. However, the effect of sex was non significant for heavy and light viewers. The effect of video viewing was significant for females (F (1,396) = 6.42, p= .05) and non significant for males F (1,396) = 2.694).

Social Relations:

The Mean and SD of Social Relations of the heavy and light viewers for both boys and girls were computed. Heavy viewers performed poor compared to light viewers. The mean scores for boys and girls for each category are presented in Table 29 and Figure 11. The higher scores indicate more problems in social relations.

Table 29

Social Relations scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	38.33	37.0	37.66	18.84	14.65	16.84	100	100	200
Heavy	42.44	49.33	45.88	18.30	17.60	18.24	100	100	200
Total	40.38	43.16		18.64	17.29		200	200	400

Figure 11 **. Social relations of Heavy and Light Video Viewers**

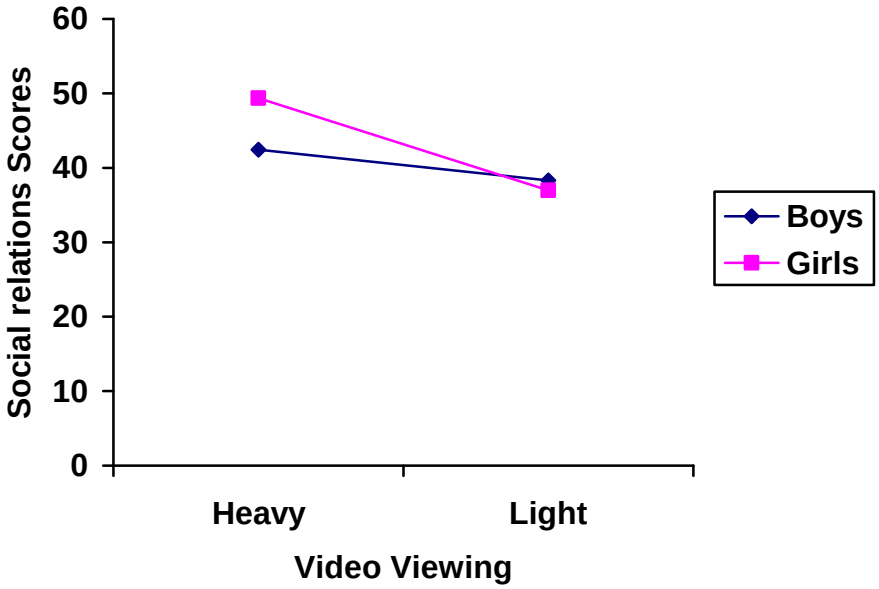


Table 30

ANOVA summary for Social Relations scores

Source	SS	df	MS	η^2	F
A(Sex)	771.605	1	771.605	0.0059	2.540
B(Video viewing)	6760.494	1	6760.494	0.052	22.258*
AxB	1690.123	1	1690.123	0.013	5.564***
Within cell	120279.012	396	303.735	0.928	

*p < .001, *** p <.05

Table 31

ANOVA summary of simple effects for Social Relations scores

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	88.445	1	88.445	.02119
B2 (heavy viewers)	2375.605	1	2375.605	7.8147**
Error term	120279.012	396	303.735	
B (video viewing) at:				
A1 (Boys)	844.605	1	844.605	2.7807
A2(Girls)	7601.445	1	7601.445	25.02*
Error term	120279.012	396	303.735	

*p < .0001, ** p <.01

It is evident from Table 30 that main effect of sex yielded an *F* ratio of *F* (1, 396) = 2.540, *p* = .112, η^2 = .0059 indicating that there is no difference in mean change scores in females (*M* = 43.166, *SD* = 17.29) and males (*M* = 40.38, *SD* = 18.64). The main effect of category yielded an F ratio of *F* (1, 396) = 22.258, *p* = .001, η^2 =0.052 indicating that mean change score was significantly greater for heavy viewers (*M* = 45.88, *SD* = 1.39) than for light viewers (*M* = 37.66, *SD* = 16.84). The interaction effect was also significant, *F* (1, 396) = 5.564, *p* = .019, η^2 =0.013.

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 31. However, the effect of sex was non significant for light viewers and significant for heavy viewers (F (1,396) = 7.8147, p = .01). The effect

of video viewing was significant for females (F (1,396) = 6.42, p= .05) and non significant for males F (1,396) = 2.694).

Eating patterns (Eating irregularities):

The Mean and SD of eating patterns scores of the heavy and light viewers for both boys and girls were computed. Heavy viewers scored higher as compared to light viewers. Table 32 and Figure 12 indicate the mean scores for boys and girls in light and heavy video viewing category. The higher scores indicate maladaptive eating patterns.

Table 32

Eating patterns (eating irregularities) scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	32.76	24.19	28.47	10.85	10.09	29.99	100	100	200
Heavy	39.95	47.76	43.85	12.42	12.19	12.88	100	100	200
Total	36.35	35.97		30.33	16.25		200	200	400

Table 33

ANOVA summary for eating patterns (eating irregularities) scores

Source	SS	df	MS	η_2	F
A(Sex)	14.512	1	14.512	0.00006	0.028
B(Video viewing)	23657.370	1	23657.370	0.10	45.628*
AxB	6708.39	1	6708.39	0.028	12.938*
Within cell	205320.181	396	518.485	0.871	

*p < .0001

Figure 12 **. Eating patterns(eating irregularities) of Heavy and Light Video Viewers**

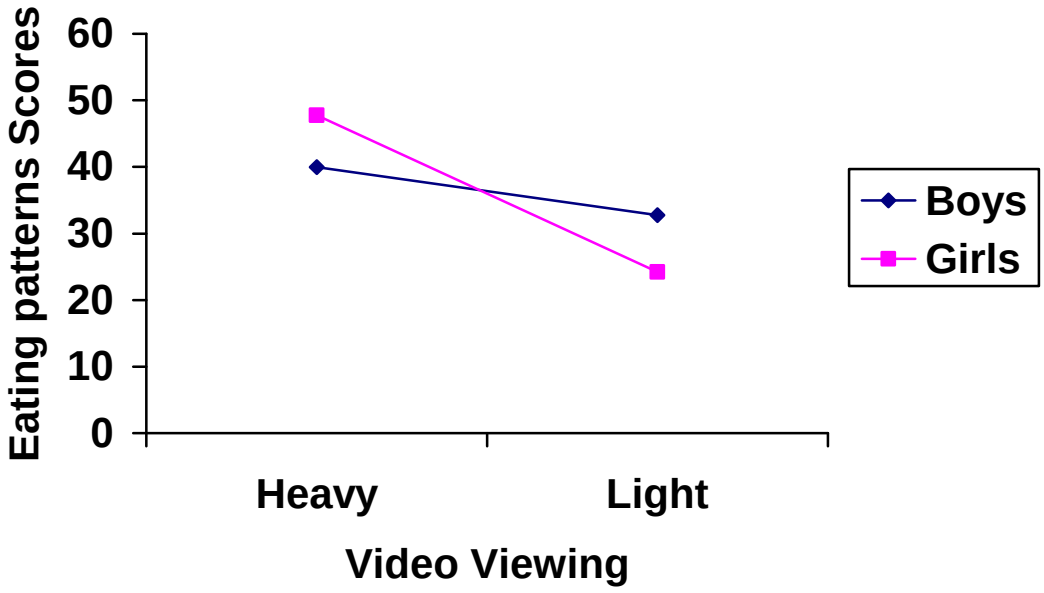


Table 34

ANOVA summary of simple effects for eating patterns (eating irregularities) scores

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	3672.245	1	3672.245	7.082**
B2 (heavy viewers)	3049.508	1	3049.508	5.882***
Error term	205320.181	396	518.485	
B (video viewing) at:				
A1 (Boys)	2584.805	1	2584.805	4.985***
A2(Girls)	27777.245	1	27777.245	53.27*
Error term	205320.181	396	518.485	

*p < .0001, **p < .01, *** p <.05

The data was analyzed using a 2x2 ANOVA and the results are given in Table 33. It is evident from the table that the main effect of video viewing is significant. The main effect of category yielded an F ratio of F (1, 396) = 45.628, p = .0001, η^2 =.10 indicating that mean change score was significantly greater for heavy viewers (M = 43.85, SD = 12.88) than for light viewers (M = 28.47, SD = 29.99). The main effect of sex (F (1,396) =.028, p =.867, η^2 = .00006) indicating that there is no difference in mean change score in males (M = 36.35, SD = 30.32) and females (M = 35.97, SD = 16.25). The interaction effect (F (1,396) = 12.938, p =.0001, η^2 = .871) is also significant.

A simple effects analysis was carried out in order to get further information, the outcomes of which are presented in Table 34. The effect of sex was significant for both the categories (light viewers: F (1,396 = 7.082, p = .01; heavy viewers (F (1,396) = 5.882, p= .05). The effect of video viewing was significant for both the sexes (boys: F (1,396) = 4.985, p= .05; girls: F (1,396) = 53.27, p =.0001).

Sleeping patterns (sleeping disturbances) :

The Mean and SD of sleeping patterns (sleeping disturbances) scores of the heavy and light viewers for both boys and girls were computed. Heavy viewers performed scored higher on sleeping disturbances as compared to light viewers. The mean scores for boys and girls for each category are presented in Table 35 and Figure 13. The higher scores indicate more irregular sleeping patterns in the form of irregular sleep, waking up in between.

Table 35

Sleeping pattern (sleeping disturbances) scores of boys and girls for light and heavy video viewers

Category	Mean			Standard deviation			Sample size		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Light	32.27	25.0	28.63	13.53	7.83	11.61	100	100	200
Heavy	38.72	44.61	41.66	13.53	12.14	13.32	100	100	200
Total	35.50	34.80		14.03	14.16		200	200	400

Table 36

ANOVA summary for sleeping patterns (sleeping disturbances) scores

Source	SS	df	MS	η^2	F
A(Sex)	48.225	1	48.225	0.0006	.0330
B(Video viewing)	16972.299	1	16972.299	.2144	116.312*
AxB	4334.028	1	4334.028	0.054	29.701*
Within cell	57784.259	396	145.920	0.730	

*p < .0001

Table 37

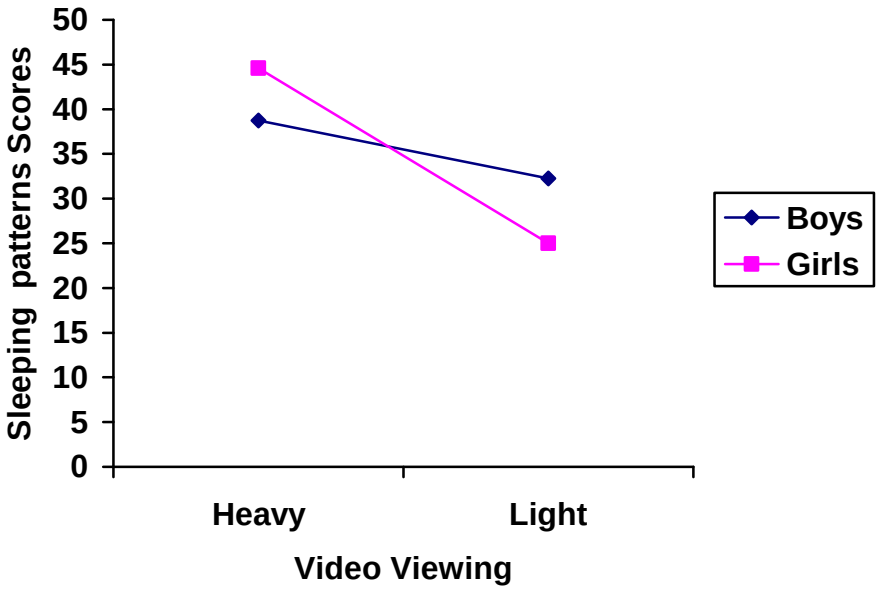
ANOVA summary of simple effects for sleeping patterns (sleeping disturbances) scores

Source	SS	df	MS	F
A (sex)at:				
B1 (light viewers)	2642.645	1	2642.645	18.11*
B2 (heavy viewers)	1734.605	1	1734.605	11.88*
Error term	57784.259	396	145.920	
B (video viewing) at:				
A1 (Boys)	2080.125	1	2080.125	14.255*
A2(Girls)	19227.605	1	19227.605	131.768*
Error term	57784.259	396	145.920	

*p < .0001

The data were analyzed using a 2x2 ANOVA and the results are given in Table 36. It is evident from the table that the main effect of video viewing is significant (F (1,396)=116.312

Figure 13 **. Sleeping patterns (sleeping disturbances) of Heavy and Light Video Viewers**



p = <.0001, η^2 = .2144 indicating that mean change score was significantly greater for heavy viewers (*M* = 41.66, *SD* = 13.32) than for light viewers (*M* = 28.63, *SD* = 11.61) and the interaction effect is also significant (F (1,396) =29.701, p=.0001, η^2 = .054. However the effect of sex (F (1,396) = .0330, p=.566, η^2 = .0006) indicating that there is no difference in mean change score in males (*M* = 35.50, *SD* = 14.03) and females (*M* = 34.80, *SD* = 14.16) is not significant.

To get further insight into the data a simple effect analysis was carried out, the outcomes of which are presented in Table 37. The effect of sex was significant for both the categories (light viewers: F (1,396 = 18.11, p = .0001; heavy viewers (F (1,396) = 11.88, p= .0001). The effect of video viewing was significant for both the sexes (boys: F (1,396) = 14.255, p= .0001; girls: F (1,396) = 131.768, p =.0001).

Obesity

The heavy viewers scored higher as compared to light viewers. The frequency and chi-square scores for category are presented in Table 38. The higher scores indicates higher rate of obesity.

Table 38

Crosstabulation of video viewing category and obesity

Obesity	Category		χ^2
	Heavy	Light	
Yes	10	4	1.8502
	(-3)	(3)	
No	190	196	
	(3)	(-3)	

Note. Adjusted standardized residuals appear in parentheses below group frequencies.

A chi- square test of independence was performed to examine the relation between video category and obesity. The relation between these variables was non significant, χ^2 (1, N=400) =1.8502.

The girls scored higher as compared to boys. The frequency scores and chi- square scores are presented in Table 39. The higher scores indicates higher rate of obesity.

Table 39

Crosstabulation of gender and obesity

Obesity	Gender		χ^2
	Boys	Girls	
Yes	5	9	.6582
	(2)	(-2)	
No	195	191	
	(-2)	(2)	

Note. Adjusted standardized residuals appear in parentheses below group frequencies.

A chi- square test of independence was performed to examine the relation between gender and obesity. The relation between these variables was non significant, χ^2 (1, N=400) =.6582.

Hyperactivity

The heavy viewers scored higher as compared to light viewers. The frequency and chi-square scores for category are presented in Table 40. The higher scores indicates higher rate of hyperactivity.

Table 40

Crosstabulation of video viewing category and hyperactivity

Hyperactivity	Gender		χ^2
	Heavy	Light	
Yes	77	51	7.7664**
	(-13)	(13)	
No	123	149	
	(13)	(-13)	

Note. **= p<.01. Adjusted standardized residuals appear in parentheses below group frequencies.

A chi- square test of independence was performed to examine the relation between video viewing and hyperactivity. The relation between these variables significant, χ^2 (1, N=400) =.7.7664, p< .01. Heavy viewers were more hyperactive than were light viewers.

The boys scored higher as compared to girls. The frequency scores and chi- square scores are presented in Table 41. The higher scores indicates higher rate of hyperactivity.

Table 41

Crosstabulation of gender and hyperactivity

Hyperactivity	Gender		χ^2
	Boys	Girls	
Yes	65	63	.3478
	(-1)	(1)	
No	135	137	
	(1)	(-1)	

Note. Adjusted standardized residuals appear in parentheses below group frequencies.

A chi- square test of independence was performed to examine the relation between gender and hyperactivity. The relation between these variables was non significant, χ^2 (1, N=400) =.3478.

CHAPTER 5
DISCUSSION

COGNITIVE PROCESSES

An excessive exposure to visual stimulation using television, computer graphics and video games is hypothesized to have negative impacts on very elementary and complex cognitive functioning at a very stage in ontogenetic development. Excessively bright and fast moving and flickering visual displays can have both inhibitory and suppressive effects and can inhibit cognitive mechanisms underlying the evolution of vivid and rich memory imagery and similar processes linked to creative imagination, free play of fantasy, etc.

In the visual medium - computer and TV displays considered as representative instances - there is an overemphasis on brightly illuminated objects and characters (in scenes), highly explicit narratives, and highly simplistic presentation of sequences involving facts, figures and bits of information. There is little demand placed on the minds of the young viewer, to explore from the given facts, to infer and even solve problems. In fact, the interactive and highly controllable nature of any of these visual presentation modes inherently predisposes the learner to be a passive spectator of images played in front of him or her. There is little emphasis to fractionate the wholes, to dissemble the complex and to be analytical in the spatial - geometric reasoning sense. Moreover, the cognitive competence is hardly demanded by these displayed lessons or graphics such that the learner is not even prompted to deduce rules, meanings, and even to explore the unseen and the unthinkable. This, in the long run can have a heavy crippling effect on the evolving minds and its capacity for creative imagination and lucid exploration of the mind' realms.

Children are growing today in an environment that includes an element of daily visual stimulation never before a part of the human experience. Mass media, family and school play major roles in the development and maintenance of the individual. Recent survey by Turow (1999) suggest that media is the most frequent on-line activity among the 8-12 year old children. Television viewing is negatively correlated with cognitive development.

Attention span

The first major hypothesis posited in this investigation that heavy television viewers may show poor attention span compared to light viewers was confirmed.

According to DeGaetano (1994) when we keep our head at an angle to the television and wait for a commercial to occur and try hard not to look at the commercial, we will find that it is virtually impossible not to look. The quick change of images on the screen activates the brain's "Orienting response" as discovered by Ivan Pavlov in 1927. Human beings are programmed to look at abrupt changes in our visual field, even in our peripheral vision. It is part of our survival mechanism. The colorful quick images on TV or video game are difficult for low brain systems to resist.

If children develop a passive TV habit, it is more likely that their attention span is not going to develop normally. The faster pace of the images they are watching, the more likely they will keep watching and the more likely the child's attention span will be jerked around. The pacing of TV program or movie determines that the child will watch one image for 3 seconds, another for seven seconds, and another for five seconds and so on. Since the image changes rapidly so does the child's attention. In contrast to this an externalized control such as participating in a self directed play activity, the child determines how long he / she will attend to the intended tasks and not the script-writer.

Another important point is that the displacement of self directed, challenging mental talks leads to an undeveloped attention span. When children are engaged in self directed activities such as playing or doing some work, they are talking to themselves, making choices, and directing their own attention. Metacognitive abilities are blossoming along with mindfulness, (De Gaetano, and Mureen, 1997). In most of the homes the television is on for 7 hours each and every day. A major distraction from the internal landscape. As children tend to focus their attention on a mental challenge in the 3-D world, the 2-D world blares and beckons. Children continually stop what they are doing and look at the screen. A constant stream of interruption disengages the child's inner speech during the self directed experience. Concentration and sustained attention become more and more fragmented, eventually disappearing. Now the child is no longer constructing personal meaning internally through thinking process and self-talk. The child's attention has been "captured" by the saliency of the external image; internal control of attention span diminishes as the child becomes a spectator. When this happens for hour’s everyday through out childhood, the likely outcome is a rambunctious brain (DeGactano, 1997). Frequent video viewing has been found to be associated with the risk for development of attention problems (Johnson, Cohen, Kasen & Brook, 2007). Research indicate that video viewing is negatively correlated with reading ability and other dimensions of academic achievement and the magnitude of co-relation rises sharply

after 20 hours per week of viewing (Walberg & Haertal,1992; Winn,1985; Koolstra & van der Voort,1996). The novelty of the visual stimulus, rapid formal features such as movements, visual complexity, acts, pans, zooms that produce an orienting reflex that governs the children's video viewing (Huston & Wright, 1989).

Excessive TV viewing at a young age may play role in attention deficit disorder (ADD). There is enough research to support that if we prohibit children under five from viewing TV in significant amount will reduce the risk of getting ADD and attention deficit hyperactive disorder (ADHD). Television flickers at an average rate of once every 3.5 seconds. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits (Dumont, 2000).

Children entering Kindergarten today exhibit markedly diminished listening skills and attention spans, both of which are closely associated with the developing reading skills. The ability to pay attention is a primary element in all thinking. A child who cannot pay attention is not manifesting reading readiness. Television is thought to be the new element in modern childhood that has affected children's attention spans. It's most successful techniques, such as short segments, fast action, and quick cuts, fades and dissolves - all those break time into perceptual bits. Reading however, requires perceptual continuity to trace line after line, whereas TV habituates the mind to take short "takes" rather than continuity of thought required by reading. Reading requires effort, and practice, and is hard, analytical work, compared with the passive and effortless intake of television. Studies have shown that the amount of television viewing will predict a student's reading comprehension score move actually then any other variables.

The significant gender differences are also observed in this study. Males performed better as compared to females on the test of digit span. The results refute the previous studies that support females have longer attention spans (Kogan, 1987). Females are more responsive to distal stimulation and males are more responsive to proximal stimulation.

Visual Memory

The second hypothesis of this study that heavy television viewers may show poor visual memory compared to light viewers was also confirmed. Heavy viewing boys and girls performed very poor compared to light viewers. In television, there is a rapid pace of presentation of material with constant intercutting, interruption and shifts in sound levels. Commercials are primarily designed to keep the viewers attention on the screen. This is

accomplished quite skillfully by producers who know to shift sequences rapidly, zoom in and zoom out, and suddenly introduce new settings, loud music, new characters and a variety of special effects. A cognitive analysis suggest that because cognitive processing takes place over time, effective learning and storage of material presented requires some mental replaying and rehearsal with an occasional opportunity to shift one's attention away from the set and reflect on what seems if new material is piled up on the top of other material, particularly irrelevant contents, one cannot sit and reexamine information (Wright and Huston, 1983; Collins, 1982). According to Singer & Singer (1976), carefully designed, age specific formats television messages are not only well perceived by children but yields gain in cognitive and affective areas. The structural aspects of television and video erase off the visual images formed in the child during the process of reading. Movies and news both strongly tend to choose subject matter that has high visual value. Before one image, statement or idea can be analyzed for its completeness, fairness, or impact, it has been replaced by another one. This over flooding of images created by the video detrimentally affects the visual memory of the content what ever they have studied or visualized. Cognitive studies on specialization of the brain's hemispheres have shown that there can be some sort of hemispheric lateralization. The right brain which is the center for visual processing is also the center for processing negative emotions while the left brain which is the center for verbal processing is also the center for processing positive emotion. Such studies found some support to the hypothesis that negative messages are more thoroughly processed when carried in the video and positive messages are more thoroughly processed when carried in the audio.

Video viewers have limited capacity as information processors. Many aspects of television's content and structure have been shown to alter capacity allocation (Lang, 1993; Lang, Geiger, Strickwerda, & Sumner, 1995). Technological advances have transformed our experience of time and space over the centuries and have fundamentally altered the constitution of collective memory. The media continuously pervade time and space which limits our memory (Rose, 1993). Television can be said to be an attractor that collapses memory and history into its real time void (Urry, 2002). Research also shows that attention levels do not remain constant during viewing of a message; attention frequently varies both between and within programs, individuals, and situations. In particular, attention levels during viewing of a single message have been shown to fluctuate predictably as a function of a television message's structure and content (Lang, 1995; Reeves, Thorson, & Schleuder, 1985; Reeves & Thorson, 1986; Reeves, et al.,

1985). This research has demonstrated fairly convincingly that exposure to a message is not a guarantee of attention. Even among "attentive viewers", attention level varies over the course of a viewing session.

Recent research suggests that a similar situation exists for the relationship between attention and memory. Early research often inferred attention by measuring memory - making the assumption that if viewers remembered something then they must have paid attention to it, and if they did not remember something, it was because they had not paid attention to it (Grimes & Meadowcroft, 1995). However, it now appears that many types of television messages elicit quite high levels of "attention" and quite low levels of memory for the content of the message (Gunter, 1987; Thorson, Reeves, & Schleuder, 1985, 1986).

Using the limited capacity approach to television viewing to analyze the relationship between TV's form and content and viewers' attention to and memory for television messages, Lang and her colleagues have shown that many aspects of television can create states of high attention, which result in poor memory for television messages (Lang, Bolls, Potter & Kawahara, 1999; Lang, Newhagen, & Reeves, 1996). The limited capacity approach to television viewing suggests that when a television message elicits an orienting response, this results in an increase in the allocation of processing resources to encoding the information in the message. Several studies (Lang, 1990; Lang, 1991; Reeves, et al., 1985; & Thorson & Lang, 1992) have demonstrated that the formal or structural features of television (such as cuts, movement, and sound changes) both evoke the orienting response and increase the resources allocated to processing messages. Both Lang et al. (1993) and Geiger and Reeves (1993) demonstrated that secondary task reaction times (often used as a measure of resources allocated to processing) are slower immediately following both cuts and edits in television messages. At the same time, this research shows an increase in attention and resource allocation elicited by the cut or edit does not lead automatically to an increase in memory for the message.

The media intervene in the process of memory by often constructing a view of the world as a perpetual and pervasive present through the real time lens of television. Technological advances have transformed our experience of time and space over centuries and have fundamentally altered the constitution of what has been called collective memory (Hoskins, 2004). The media themselves operate as 'framework' of the memory as they assist continuously the reconstruction of our past by dominating the present. Human memory racks, selectively recalls, and alters the past as it represents it in

real time. It collapses times and forges simultaneity of the non-simultaneous. The media continuously pervade time and space which limits our own memory (Rose, 1993). Television produces a highly complex set of shifting times that connect, disconnect, and reconnect presence and absence. The impact of the accessibility of times and space in the television present shift our perception. Compelling viewing is ultimately very tiring. Being exposed to a continuous flow of information does not present much time for reflection. In this way television collapses memory simultaneously into the present and into the archive (Hoskins, 2004). These findings clearly indicate that the impact of television viewing on memory is not short term but has a long term effect.

Significant gender differences were noted in visual memory. Females performed better on the test of visual memory as compared to males. The results are supporting the previous research; the various studies indicate females perform better than men on several different verbal learning – remembering tasks, name- face associations, and the grocery list selective reminding (Halpern, 2000). Stumpf and Jackson (1994) found women were substantially better on tests of memory than men. Birenbaum , Kelly and Keren (1994) reported that females have better memories than males and females have better episodic memory than males (Herlitz, Nillson and Backman, 1997). Women performed better than men in tests of verbal memory and learning, men performed better than women in spatial organization .

Creative imagination

This third hypothesis in this investigation that heavy video viewers may perform poor compared to light viewers on test of creative imagination was also confirmed. Imagination can be defined as a critical feature of human cognitions and information processing. This human conscious information processing necessarily involves representation of the stimulus or the environmental events. The secret of a good memory is the secret of forming diverse and multiple associations. The interplay of light and shadows throws up immense variety of forms illumines the inner eye of the beholder to capture and explore unresolved forms, patterns and articulations. It provokes freeplay of imagination and fantasies to enrich and enliven the cognitive realms. The role of fantasy and imagination as essential ingredients of creativity has been well documented by several investigators (Koestler, 1964: Barron, 1968; Freud, 1947). The perception of movement in Holtzman Ink blots requires certain level of ideation activity. Rorschach (1964) considered movement response broadly as an indication of one's capacity for "inner creation". Rapaport (1946) suggested that movement responses indicated ideational

potential and covaried with the intensity and range of ideational activity. For Mayman (1977), requisite to the offering of a movement response is the availability of a fantasy life one can dip into to vivify the responses. Fantasy also, as Singer (1975) has demonstrated a component of well being control. It is a process we rely upon in steering a middle course between the two extremes of external and internal stimulation (Rapaport, 1946). Often it is more sensible and realistic to think and fantasize about an activity than to actually do it. A well developed fantasy life, then, serves as containment for aggressive and other urges.

The studies report inverse relationship between heavy television viewing and self-generated imaginative capacities (Singer, 1982). The pretend play can help children develop important cognitive and emotional skills and can play an important part in their building the capacity for self-regulation. It helps the child in dealing with complexity and novelty of its environment. However, children's play is also affected by television. It affects child's social, emotional and intellectual development. Children have become increasingly dependent on television and they are less likely to initiate their own activities. It has also affected the very nature of children's play (Singer and Singer, 1976).

Imaginative play may lead to specific increase in language usage, imagery abilities, empathic potential, capacities for self restraint and tolerance of delay, enhancement of the child's acquisition of the distinction between reality and fantasy, and a number of other specific features including the more conflict-resolving or identity-forming features that are so much a part of clinical applications of symbolic play. The exposure to fantasy play yielded longer periods of play in general, more persistence and positive emotionality (Singer, 1993).

According to Scachtel (1966), Creative experience refers to a process whereby one puts something of oneself into one's own experiences-a type of empathic projection. Accordingly, to make an experience creative, one cannot be merely a mirror that reflects the image cast upon it; rather, one's own experience must be aroused and then merge with the object experience. Only at this point something new is experienced. Without this personal, subjective element, the object is reproduced, and not experienced. Therefore, creative experience involves an openness and sensitivity to the external world, as well as the capacity to bring one’s own attitudes and previous experiences to that which is perceived. This is not possible when a child is excessively exposed to videos and televisions.

The new electronic media introduced changes in the attention capacities of children and adults and in the style and structure of their consciousness and imagination. The findings of this study are in line with the study conducted by Singer and Singer (1981). The preschoolers who were heavy viewers of television were less imaginative, than light viewers. Imagination is a form of human thought characterized by the ability of the individual to reproduce images or concepts originally derived from the basic senses and reflected in one's consciousness as memories, fantasies, or future plans. Imagination can be regarded as a critical feature of human cognition and information processing. This human conscious information processing necessarily involves representation of the stimulus or the environmental events. The secret of a good memory is the secret of crative imagination. Children's play has been very severely affected by video viewing. As the child spends most of the play time in watching Television and other modes, he hardly engages in normal play activities. Play involves a critical activity of behaviors that serves important in the child's social, emotional, and intellectual development. As television viewing is a passive activity children are less likely to initiate their own activities (Singer and Singer, 2001). Children have become increasingly dependent on media and they are less likely to initiate their own activities and have also affected the very nature of children's play. Heavy video viewing has resulted in the loss of playtime and decreasing imaginative play and reduction in creativity (Valkenburg, 2001). TV viewing also hampers sustained effort and reflection that is required for process of imagination (Valkenburg & van der Voort, 1999). Play involves a variety of behaviors that serve important purpose in child's social, emotional, and intellectual development. The cognitive competence is hardly demanded by presentation of sequences that predisposes the learner to be a passive spectator of images played in front of him or her and hampers child's capacity to attend and imagine. Imagination is an inner eye that preserves the possibilities in contrast to the external organic eye, which preserves what is given out there.

Lev Vygotsky (1976) defines imagination as a new formation which is not present in the consciousness of the very young child. It is totally absent in animals and represents a specifically human form of conscious activity like all functions of consciousness, it originally arises from action. Scaffolding denotes the situation when siblings or adults enable the child to accomplish more through their aid and encouragement than the child would accomplish alone. Social interactions is fostered by scaffolding when the parents, teachers, and siblings guide the child in play by offering new ideas or words for the play

script, or even by assisting the child to build a fort or castle. All these get affected by excessive video viewing. The child is totally isolated from the real environment and get into the world of unreality (Vygotsky (1978).

There is a growing body of empirical evidence, indicating that watching television, computers, video games causes physiological changes irrespective of the type of program children watched (Sigman, 2007) Environmental experiences play a major role in shaping the developing brain due to the plasticity of its neural connectivity. Prolonged exposure to any stimulus in the child's environment affects the mental and emotional growth of the child and makes the brain to deprive of other experiences. It has been shown that this shaping process affects our brain structure and functions and influences both cellular development and neurotransmitter regulation (Healy, 2004; Sigman, 2007).

Video viewing is considered to be the flavor enhancer of the audiovisual world providing unnatural levels of sensory stimulation, thereby having a tendency to overpay the child for paying attention to it. This may physically corrupt the reward system of the brain in releasing the dopamine, the neurotransmitter which is associated with reward. Excessive dopamine corrupts the reward system and children fail to pay attention to real-life events as they are less stimulating. Studies have shown that the underfunctioning of dopamine may fail to reward brain's attentional systems (Sagvolden, Johansen, Aase & Russel, 2005).

Frontal lobe is associated with learning, memory, emotion, and impulse control, and its optimal development is essential for problem solving, personality manifestations, social interactions, and judgment. Kawashima (2001) claims that prolonged video viewing can stunt the teen brains. It can be concluded that prolonged video viewing can have crippling effects on the evolving minds and its capacity for creative imagination and lucid exploration of the mind's realm.

There were no significant sex differences in the performance on the test of creative imagination. Video viewing had significant impact on both the sexes. Media is one of the major socializinactor with a great potential to influence children's developing imagination. It is clearly indicated that imaginative play is essential for the development of children. The culture helps in shaping the play activities and in return the formation of creative thoughts. According to Berk (1997) culture shapes environment in which children's interaction and play activities take place. Cultural beliefs about the importance of play also affect the quantity and quality of peer associates. Play itself can be viewed as

characteristically bi- functional. Hughes et al. (1996) argues that children's play is found virtually in every culture in the world, but there is much variety in the amount of play, and the complexity of the games children engage in. The study of play in any particular culture provides us with much information about the nature of culture itself. The impact of culture on the development of the individual may easily be perceived. Each family has a particular culture and each society wants to maintain its culture. The individual comes into direct and immediate contact of the family because he is born and nurtured into it. So its culture leans its inevitable impact on him (Chaube, 2003). Some investigators believe that sex differences in play are socially conditioned by the toys and rewards children are given. Lissa (1939) explained that sex too influences the choice of a play. The brother and sister of the same age will play with different things in the same environment, the girl probably chooses doll play and boy plays with engines or motor cars. Lissa (1939) has maintained that gender differences in play are related to cultural condition and adult intervention. Spodek & Saracho (1996) reported that make believe play as the major means through which children extend the cognitive skills and learn about important activities in their culture. Vygotsky's theory and findings that support it tell us that providing a stimulating environment is only part of what is necessary to promote early cognitive development. Due to these and many other reasons, excessive video viewing is a serious handicap to the cognitive development of young children.

AFFECTIVE PROCESSES

Television and other sources of media provide a multitude of images that have the capacity to worry, frighten, or even traumatize children. There is growing evidence that fear induced by mass media exposure is often intense and long lasting, with sometimes debilitating effects (Cantor, 1998). Research on the relationship between cognitive development and emotional responses to television can be helpful in predicting the types of television programs and movies that are more or less likely to frighten children. The developmental findings can help parents and other care givers make more sensible viewing choices for children (Cantor, 1998). Any activity that is engaged in for disproportionate amount of time at the expense of other leisure activity has negative consequences on social and educational development. The gained self-sufficiency has allowed the individual to become more isolated and cloistered. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships, emotional stability and emotional quotient.

Emotional stability

The findings confirmed the proposed hypothesis that heavy viewers may perform poor than light viewers on affective dimension emotional stability. In addition to this sex differences in emotional stability were also found. The findings of this study can be explained in terms of social learning theory and the cognitive theory (Bandura, 1986; Bandura, 1994). It states that novel behavior is acquired directly through experience or indirectly through the observation of models. The cultivation hypothesis (Gerbner, Gross, Morgan, & Sigoreilli, 1986; Bryant & Bryant, 2001) also asserts that heavy television viewing leads to or cultivates perceptions of the world that are consistent with televisions portrayals and television provides a source of companionship. It also assumes that heavy viewers are also less selective in their viewing, engage in habitual viewing and experience a good deal of sameness of the content. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships. Fantasy is the means by which a child advances towards cognition and orientation to reality. The failure of cognitive ability or fantasy to develop normally is symptom of emotional maladjustment.

The video viewing has significant effect on boys even though girls also use computers and television. The plausible explanation may be that media portrayals are mostly males and females are not able to associate themselves with them, due to which they are less influenced by media. The studies report that men outnumber women in prime- time programming (Davis, 1990; Signorielli & Bacue, 1999). Another reason is that girls view family drama and non aggressive programs which portray traditional roles. Females characters are more likely than males characters to be portrayed in traditional stereotypes such as being emotional, romantic, affective, and domestic (Thompson & Zerbinos, 1995). The girls' view media under parental influence which reduces the impact as parental control help them in distinguishing between reality and fantasy. It is also reported that boys are more likely than girls to use media as a tool to increase their energy level and seek stimulation and girls use it for socialization. This indicates that boys are influenced more by media.

Significant gender differences were also noted in emotional stability. Emotional stability can be described as excersing restraint during critical situations and appreciating the distinction between felt and expressed emotions. Girls performed better as compared to boys on the test of emotional stability. The observed gender differences seem to be partially attributed to socialization pressures on girls to express their feelings and on boys

to inhibit them. Boys are taught to be tough and brave, and girls on other hand are socialized to be nurturing. Hoffner (1995) reported that boys are less willing to show their emotions than girls. A possible reason may be that girls are in general more home bound and therefore better focused on emotional attachments and relationships than boys who have greater exposure to the influences of the media and other sources of information. Bhatia and Desmond (1993) found the males use media as an escape from unpleasant states as compared to females. They suggested that this may be because females are more open to self disclosure and share relationships concerns with other females as compared to males. Valkenburg, Cantor and Peeters (2000) found that 7-12 years girls reported resorting to social support, physical intervention and escape more often than boys did, due to which girls may have a greater need for social approval. The qualitative analysis reveal that almost 85% of the females are affected more by emotional reactions, remain disturbed for longer time if something unusual happens, stop interacting with people and are more concerned about trifle matters as compared to 65% of the boys. The evidence does confirm that girls show greater emotional expression than boys, they experience emotions more intensely, and they display more frequent expressions of emotions. Girls also report more comfort in expressing emotions (Joshi & Maclean, 1994). They are better at reading non verbal and paralinguistic cues than boys (Kring & Gordon, 1998). The results indicate that girls are emotionally stable as compared to boys as they understand and express their emotions effectively.

Emotional Quotient

The findings confirmed the proposed hypothesis that heavy viewers may perform poor compared to light viewers on emotional intelligence. In addition to this, sex difference in emotional quotient was also found. The findings of this study can be explained in terms of social learning theory and the cognitive theory (Bandura, 1986; Bandura, 1994). It states that novel behavior is acquired directly through experience or indirectly by observing such behavior that brings rewards to others through vicarious reinforcement. Repeated exposure to media teaches children novel behaviors that become part of their cognitive structure and behavioral repertoire. The cultivation hypothesis (Gerbner, Gross, Morgan, & Sigoreilli, 1986; Bryant & Bryant, 2001) also asserts that heavy television viewing leads to or cultivates perceptions of the world that are consistent with televisions portrayals, and television provides a source of companionship. In sum, the growing dependence on technology is allowing each individual to become more and more "self-sufficient". This gained autonomy has allowed the individual to become more

isolated and reclusive. The need for social contact, in many cases, is being fulfilled by the media - especially television. Relationships are not being initiated with "real" people, but with the projected, edited, "spun" images the users share on-line (Stafford, Kline, & Dommick, 1999). Computer use can strongly influence the degree to which students collaborate with their peers, which in turn may well influence what and how they learn (Hawkins, 1984). Barnah (1986) considers play as a natural means of keeping physical health and vigor of children. Play activities form a important aspect of social development. Emotional adjustment and emotional maturity may also be ensured through play. Play gives freedom of self- expression, which is an essential condition of development. This is also indicated by low scores on interpersonal scale. Media cultivates the meanings of social, personal and cultural contexts. It also assumes that heavy viewers are also less selective in their viewing, engage in habitual viewing and experience a good deal of sameness of the content. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships which explains the plausible cause for low scores of heavy viewers on intrapersonal scale.

The child development experts believe that the stimuli children receive and the activities they engage in during the first few years of life are critical not only for their physical well-being but also for their social, emotional and cognitive development. Vygotsky (1978, 1986) argued that cognitive development did not just happen in the brain of the individual child, but depended on interactions between the child and cultural tools available for mediating knowledge. And in present era media and its components are major source of cultural tools which influence child development. Social behavior is controlled by programs or scripts that are acquired in childhood. The young children may also have more difficulty distinguishing reality from fantasy and may have a greater tendency to identify with and imitate media characters. Children find it difficult to separate televised fantasy from life reality. This supports the heavy viewers depicting low adaptability scores.

The video viewing displaces the child’s imaginary play which has an important developmental function in helping the young child to understand mental states as desires and beliefs as entities that can be reasoned about and used to predict behavior (Lillard, 2002). Cognitive priming emphasize that watching negative feelings may trigger negative feelings which in turn prime other negative feelings, thoughts, memories and behavioral

tendencies. Cognitive associative network affect the link between media activated thoughts and actual behavior (Jo & Berkowitz, 1994).

Internet addiction was significantly associated with depressive symptoms and obsessive-compulsive symptoms, high avoidance, low self-directedness, low cooperativeness and high self-transcendence (Ha, Kim, Bae, Bae, Kim, Sim, etal, 2007). The low scores on general mood scale can be attributed to impact of prolonged video viewing and realed changes. Internet addiction exhibit more impulsivity than controls and have various co morbid psychiatric disorders (Cao, Su, Liu, & Gao, 2007). Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, and Scherlis (1998) reported that heavy use of the Internet is related to the experience of loneliness among users. Stoll (1995) and Turkle (1996) showed that the use of the Internet is likely to result in social isolation. They have created their, so-called, 'own world' on the internet, a place where they can talk freely (Whang & Jang, 2002). The effects of media, such as television, video games and movies on family life have also been demonstrated, and these media will effect personal and social development (Huston et al., 1992; Larson, 1995). Consequences for the child of extensive viewing may include problems of mood, behavior, and learning, and poor health outcomes (Owens, 2004). The above description reason out and support that heavy viewers scored less on emotional intelligence.

Significant gender differences were also noted in emotional quotient. Research reported that females have higher scores on emotional intelligence as compared to males (Brachett, Rivers, Shiffman, Lerner & Salovey, 2006). The results in this study indicate that video viewing has significant effect on girls even though boys also use computers, television. The plausible explanation may be that media portrayals exert stress and anxiety on females to grow up too quickly as there is growing checklist of ideals they have to adhere to. The girls are forced to grow at an unnatural pace in the society that is damaging their emotional well being. Sex role stereotypes in the media were responsible for young women's negative self concepts. This can be the plausible cause for low intrapersonal scores for females. Another reason is that girls view family drama and non aggressive programs which portray traditional roles. Females characters are more likely than males characters to be portrayed in traditional stereotypes such as being emotional, romantic, affective, and domestic (Thompson & Zerbinos, 1995). Girls are reported to like violence less, approve of it less, and see it as less realistic, they are more frightened and distressed by media portrayals, respond to it more emotionally and watch it in a more involved and less detached way than boys do (Van Evra, 1990). The low interpersonal

and general mood scale scores for females can be attributed to the distressing influence of the media portrayals.

Another possible explanation for any gender differences may lie in the types of programs preferred by boys and girls. Boys prefer violent programs and girls prefer non-violent programs. Exposure to video games, computer and television violence can serve as a proximate cause of aggression by influencing cognitive, affective and arousal variables. The desensitizing effect of media exposure is a reduction in empathy, generally defined as sensitivity to other's pain and suffering (Funk, Bechtoldt, Pasold & Baumgadner, 2004). It is also reported that boys are more likely than girls to use media as a tool to increase their energy level and seek stimulation and girls use it for socialization. This can be attributed as the possible cause for male depicting high stress management scores. Research reports that socialization pressures on girls to express their feelings and on boys to inhibit them. Boys are taught to be tough and brave, to mask their feelings, and girls on other hand are socialized to be nurturing. They are taught that anger is the only emotion socially acceptable for them to display and other emotions are stifled. Men are more likely than women to be portrayed as work oriented and women are more likely to be portrayed in home. Men are also more likely to deal with problems themselves while women are likely to seek help and to help others with their problems. This helps in developing independence and assertiveness in boys. All these evidences may be considered as contributing factors to high adaptability scores of males obtained in this study.

Research indicates that video viewing inhibits cognitive and motor skills and children with these delays are less able to cope with frustration and defer gratification. Valkenburg, Cantor, & Peeters (2000) found that 7-12 years girls reported resorting to social support, physical intervention and escape more often than boys did, due to which girls may have a greater need for social approval. Girls also report more comfort in expressing emotions (Joshi & Maclean, 1994). Inner speech is hypothesized to organize the child's internal cognitive activities and to regulate the child's external behavior. The self regulatory skills enable children to inhibit certain thoughts or actions. The girls are reported to have better inhibitory control as compared to boys. The evidence does confirm that girls show greater emotional expression than boys, they experience emotions more intensely, and they display more frequent expressions of emotions. Women are more willing to self disclosure about emotions and they see themselves and others see them, as expressing emotions more often and more intensely than men (Brody & Hall, 2000; Cross

& Madson, 1997; Gross& John, 1998). Women's faces are more spontaneously revealing of their emotions than men's faces are, and women are more successful in posing expressions of emotion than men are (Hall, 1984). Due to which females are unable to mask their emotions as males can do. This is revealed in low adaptability and interpersonal scores of females. The results indicate that girls are affected more by media as compared to boys as they understand, express their emotions effectively and assimilate emotional cues more easily.

The overall trend of the present findings is an indication that excessive video viewing is detrimental to the emotional growth of children. There are many preadolescents who spend a lot of time in video viewing have lower emotional stability and emotional development.

BEHAVIORAL PROCESSES

Excessive use of media is associated with decline in social involvement and the psychological well being. Media plays a major role in the development of cultural orientations, worldviews, beliefs and general behavioral patterns. Television and other media sources have contributed negative perception about the social and ethnic minorities, religious, social and economic groups; children start to believe the world is a more hostile place, they become emotionally desensitized. The media have been blamed for creating a distorted reality that adversely affects children and contributes to eating disorders by glamorizing unhealthy behavior and propagating a false sense of homogeneity (Jasper, 1993). The combination of unhealthy foods advertised and the media propagation of thin ideals sends conflicting messages to children, which have been associated with a rise in both obesity and eating disorders. Consequences of extensive viewing for the child may also include problems of mood, behavior, and learning, and poor health outcomes (Owens, 2004).

The number of hours of television watched per day was associated with irregular naptime schedule ad irregular bedtime schedules (Thompson & Christakis, 2005). Lack of sufficient sleep significantly affects learning and development in children which supports the hypothesis of negative influence of media consumption of childrens' sleep, learning and memory.

Social relations

The findings confirmed the proposed hypothesis that heavy viewers may perform poor than light viewers on social relations. In addition to this sex differences in impact of

video viewing were also found. The video viewing had a significant impact on females. The findings of this study can be explained in terms of solitary nature of media. Children form electronic friendships with the machines instead of friendships with the peers which results in sense of loneliness, isolation, sadness and irrelevant emotional disturbances. There are two plausible and theoretically interesting mechanisms for these changes. The first is that the time people devote to using media substitutes for the time that they had previously spent engaged in social activities. This interpretation is consistent with the finding that people who use the media more spend less time talking to household members (Watt & White, 2000). The second explanation is that , by using the media, people are substituting a poorer quality social relations for a better one-that is, substituting weak ties for strong ones(Granovetter, 1973 ; Krackhardt, 1994). Research shows that online relationships, social contacts provide less social support and less consequential social support than more intimate ties do (Krackhardt, 1994; Wellman et al., 1996). The results in this study indicate that video viewing has significant effect on girls even though boys also use computers, television. The plausible explanation may be that media portrayals exert stress and anxiety on females to grow up too quickly as there is growing checklist of ideals they have to adhere to. Another reason is that girls view family drama and non aggressive programs which portray traditional roles. The inaccurate representations in family dramas can become a part of the individual's schema about others and can serve as basis for faulty beliefs, prejudiced thinking and impaired relations.

Eating patterns(eating irregularities)

The findings confirmed the proposed hypothesis that heavy viewers may score higher as compared to light viewers on eating patterns. In addition to this, sex differences in impact of video viewing were also found. The video viewing had a significant impact on both the sexes but comparatively more effect on females. The findings can be explained in the terms of television advertising as advertising has potential influence on children because children are less likely to look at media images with a critical eye (Martin, 1997). Among the ads targeted at children, food is one of the two largest categories, the other being toys (Williams, Achterberg & Sylvester, 1993). An analysis of advertising during cartoons revealed that two thirds of the ads were for fats, oils, sweets, and high sugar cereals. None of the ads were for fruits and vegetables (Kotz and Story, 1994). Children may not differentiate advertising and television programming as adults do (Martin, 1997; Ward 1971), and young children do not fully understand commercial

messages and their intent to sell (Kunkel & Roberts, 1991; Martin, 1997). Due to this children inculcate the eating habits from media. Exposure to television food advertising increased caloric intake and snacking and decreased overall nutrient quality in children (Bolton, 1983). Media influence is interfering with normal eating and leading to higher consumption of unhealthy processed food (Ishigaki, 1991). Movies targeted to children have gratuitous images of brand name fast food restaurants. The combination of unhealthy ads with soft drink machines and fast food in school cafeterias, cinema halls have worsen the situation.

Research has indicated that television commercials promote gender stereotypes and unrealistic standards of female beauty and body shapes, thereby producing distorted body images (Lavine, Sweeny & Wagner, 1999). The media have been blamed for creating a distorted reality that adversely affects women and contributes to eating disorders by glamorizing unhealthy behavior and propagating a false sense of homogeneity (Jasper, 1993). This explains the reason for significant effect of media on females.

Sleeping patterns (sleeping disturbances)

The findings confirmed the proposed hypothesis that heavy viewers may score higher as compared to light viewers on sleeping patterns. Sleep is a physical necessity, required to build up the growing organism. It is also a psychological necessity, the pre-requisite for dreaming. The television and other sources take away the time for sleep. The dreams after TV viewing are disturbed, with vivid TV images resurfacing and causing nightmares. The number of hours of television watched per day was associated with irregular naptime schedule ad irregular bedtime schedules (Thompson & Christakis, 2005). Lack of sufficient sleep significantly affects learning ad development in children (Wiggs, 2004). Teachers comment that children are too tired and irritable to work well after late night viewing. Television viewing may simply serve to displace sleep time, thus shortening sleep duration to unacceptable limits. The time spent by the child in television viewing may substitute for other less sedentary and/or less passive activities (like playing outside, engaging in sports activities), resulting in poor-quality sleep. The content of the television programs viewed, by virtue of excessively violent and/or stimulating themes, may result in difficulty in falling asleep and/or night waking related to anxiety (Owens etal, 1999). Finally, parental television-viewing habits and attitudes about television may impact significantly on both television-viewing habits and sleep in their children. This highlights the importance to control impact of video viewing on sleeping patterns of children.

Obesity

The findings confirmed the proposed hypothesis that heavy viewers may score higher as compared to light viewers on behavioral dimension, obesity. Children spend a substantial portion of their lives watching television. The impact of video viewing causes obesity that can be explained with three mechanisms: (1) displacement of physical activity, (2) increased calorie consumption while watching or caused by the effects of advertising, and (3) reduced resting metabolism. Physical inactivity such as television viewing is a major determinant of the current obesity epidemic (Prentice & Jebb, 1995). Overweight individuals select more energy- dense foods, display enhanced huger traits with less satiety, and they eat larger more frequent meals (Blundell & Gillettt, 2001). Television affects the health of both children and adults. First and foremost, television advertisements are constantly bombarding us with dubious information about health and nutrition. Children are most susceptible to these leading advertisements. For instance, children may have a hard time recognizing fact from fiction when they see an advertisement that shows thin beautiful people enjoying high calorie, high fat foods and drinks. Roughly two-thirds of the 20,000 TV advertisements an average child sees each year are for food and most are for unhealthy foods. The majority of children who watch health related commercials believe what the advertisements say, even if the advertisements do not give accurate or balanced information.

Watching television also affects one's health by replacing other activities and by slowing the metabolic rate. Television viewing leads to obesity in children and adults when it replaces other, more active pursuits, such as walking, biking, or simply playing outdoors. All television shows, even educational non-commercial shows, replace physical activity. And watching TV is a sedentary activity that causes the metabolic rate to go even lower than when one is at rest. This means that you can burn more calories by just sitting quietly and doing nothing than you can when you sit and watch TV.

Finally, TV leads to obesity in children and adults because of the food that is typically consumed when one is watching TV. Most people tend to snack while watching TV, choosing junk foods that are convenient to eat in front of the television. Therefore, it is up to parents and teachers to give kids the tools they will need in their youth so they will continue to be active when they are adults.

Hyperactivity

The findings confirmed the proposed hypothesis that heavy viewers may score higher as compared to light viewers on behavioral dimension, hyperactivity. Excessive TV viewing at a young age may play role in attention deficit disorder (ADD). There is enough research to support that if we prohibit children under five from viewing TV in significant amount will reduce the risk of getting ADD and attention deficit hyperactive disorder (ADHD). Television flickers at an average rate of once every 3.5 seconds. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits (Dumont,1993, 2000).

The overall trend of the present findings is an indication that excessive video viewing is detrimental to the behavioral growth of children.

Therefore from the above discussion it can be concluded that prolonged video viewing is detrimental for cognitive, affective and behavioral processes of children. This study laid emphasis on the detrimental effects of heavy viewing which can be helpful for parents, teachers and counselors, so that they are able to channelize the potential human resources to the utmost. This can be beneficial for the social development which can help parents to decipher the restrained and not so restrained messages contained in television programming, advertising, and music videos. Parents can use this information in taming the programming appropriate for the children and understand the need to take the time to watch these programs with their children. The parents need to control the time of video stimulation as well as content of the video images. It can be clearly seen that heavy video stimulation hampers the overall development of children as it displaces the time for other beneficial activities. This deters the cognitive, affective and behavioral processes of children.

It is therefore, important to understand the social, cognitive and psychological realms created by video stimulation that hamper a more careful and intentional use of the medium, so that we can truly augment the worth of this indispensable driving force in childrens' lives. If the environmental influences on child development are thought of as a four-course dinner, then the place of media input is as one of the options on the dessert plate.

CHAPTER 6

CONLUSIONS AND SUGGESTIONS

This chapter includes the study in retrospect, major findings drawn from the analysis of data, implications of the study and suggestions for educational practice and for further research.

The Study in Retrospect

The present study as stated in the earlier contexts has been designed to investigate detrimental impact of video viewing of preadolescents. The study has been conducted on a sample of 400 children (200 heavy viewers and 200 light viewers). The creative imagination, visual memory, attention span, emotional stability, emotional quotient, eating, sleeping and general behavioral patterns were measured.

Research objectives

The present research has been designed with the following three principal objectives:

1. To study the detrimental effects of heavy video viewing(computers, television, video games) on children's cognitive, affective and behavioral processes of preadolescents.
2. To study the difference between heavy and light viewers on cognitive, affective and behavioral variables.
3. To compare both the sexes (males and females) on different variables.

Methodology

Tools Used

1. Video Viewing Questionnaire: To select two categories of subjects, light video viewers and heavy video viewers.
2. Digit span task: To test Attention span
3. The form C of Benton Visual Retention Test (Benton, 1992): To test the visual memory.
4. The Form A of Holtzman Ink Blot Technique (Holtzman, 1961): To test the creative imagination of children.
5. The ESTC developed by A. Sen. Gupta and A. K. Singh (2005): To measure emotional stability of the children.

6. The Bar On Emotional Quotient Inventory: Youth Version developed by Reuven Bar-On and James D.A. Parker (2006): To measure emotional intelligence in this study.
7. The checklist for childrens' habits was designed by the experimenter: To assess the child's day to day eating, sleeping, hyperactivity, obesity and social relations.

Statistics Techniques Used

1. Mean, SD, Graphical Representation.
2. ANOVA, Chi square for cognitive, affective & behavioral variables.
3. M + ½ SD, M - ½ SD to classify heavy and light video viewers.

Major findings

With respect to the first objective, the study revealed that prolonged video viewing has significant detrimental impact on preadolescents. Excessive television and computer consumption have been associated with many psychiatric symptoms, emotional, and behavioral symptoms, and attention problems. Today's children and most of their parents are living in the world of media. The massive flow of information, images disseminated by media profoundly shapes what young people think about the world and how they perceive themselves in relation to it. The pervasiveness of the media, and the extent to which their stories permeate family life, peer interaction and the entire process of growing up means that young people today have more vicarious experiences of other people and roles than ever before. Children's attention, visual memory and creative imagination are influenced by the formal features of the television medium. The video viewing displaces the time for other beneficial activities such as play, interacting with others, developing social relations which hampers the emotional and social development. In sum, the growing dependence on technology is allowing each individual to become more and more "self-sufficient". This gained self-sufficiency has allowed the individual to become more isolated and cloistered. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships, emotional stability and emotional quotient. Media play a major role in the development of cultural orientations, worldviews, beliefs and general behavioral patterns. Television and other media have contributed towards negative perception about the social and ethnic minorities, religious, social and economic groups; children start to believe that the world is a more hostile place, they become emotionally desensitized. The literature in elementary education and

in child psychology shows that the age roughly from nine until puberty is the forgotten period of childhood. It is a no- man's land as far as research is concerned. Therefore it's essential to control the detrimental impact of extensive video viewing.

With respect to the second objective, the investigator was able to analyze the impact of video viewing on heavy and light viewers. There is difference between heavy and light viewers on cognitive, affective and behavioral variables. Heavy viewers performed poor as compared to light viewers. The study indicates the impact of video viewing on cognitive development. An excessive exposure to visual stimulation in the form of television, computer graphics and video games have negative impacts on very elementary and complex cognitive functioning at a very stage in ontogenetic development. Excessively bright, fast moving and flickering visual displays can have both inhibitory and suppressive effects and can inhibit cognitive mechanism underlying the evolution of vivid and rich memory imagery and similar processes linked to creative imagination, free play of fantasy, etc. The displacement of self directed, challenging mental talks leads to an undeveloped attention span. The structural aspects of television and video erase off the visual images formed in the child during the process of reading. Movies and news both strongly tend to choose subject matter that has high visual value. Before one image, statement or idea can be analyzed for its completeness, fairness, or impact, it is replaced by another one. This over flooding of images created by the video detrimentally affects the visual memory of the content what ever they have studied or visualized. The media continuously pervades time and space which limits our memory (Rose, 1993). The secret of a good memory is the secret of forming diverse and multiple associations. The interplay of light and shadows throws up immense variety of forms illumines the inner eye of the beholder to capture and explore unresolved forms, patterns and articulations. Imaginative play may lead to specific increases in language usage, imagery abilities, empathic potential, capacities for self restraint and tolerance of delay, enhancement of the child's acquisition of the distinction between reality and fantasy, and a number of other specific features including the more conflict-resolving or identity-forming features that are so much a part of clinical applications of symbolic play. Heavy video viewing has resulted in the loss of playtime and decreasing imaginative play and reduction in creativity. Environmental experiences play a major role in shaping the developing brain due to the plasticity of its neural connectivity. Prolonged exposure to any stimulus in the child's environment affects the mental and emotional growth of the child and makes the brain to deprive of other experiences. Due to these and many other

reasons, excessive video viewing is a serious handicap to the cognitive development of young children.

The present study brings to light the existence of impact of video viewing on emotional development of children. Television and other sources of media provide a multitude of images that have the capacity to worry, frighten, or even traumatize children. Heavy viewers are less selective in their viewing, engage in habitual viewing and experience a good deal of sameness of the content. The child borrows the self from fictional characters depicted in the media and lacks keen awareness of self and self worth which hampers emotional attachments and primary relationships. The growing dependence on technology is allowing each individual to become more and more "self-sufficient". This gained autonomy has allowed the individual to become more isolated and reclusive. The need for social contact, in many cases, is being fulfilled by the media - especially television. Social behavior is controlled by programs or scripts that are acquired in childhood. The young children may also have more difficulty distinguishing reality from fantasy and may have a greater tendency to identify with and imitate media characters. The video viewing displaces the child's imaginary play which has an important developmental function in helping the young child to understand mental states as desires and beliefs as entities that can be reasoned about and used to predict behavior. There are many preadolescents who spend a lot of time in video viewing have lower emotional stability and emotional development.

The study shows a strong indication of impact of extensive video viewing on behavioral processes of preadolescents. The media has been blamed for creating a distorted reality that adversely affects the children and contributes to eating disorders by glamorizing unhealthy behavior and propagating a false sense of homogeneity. The combination of unhealthy food advertised and the media propagation of thin ideals sends conflicting messages to children, which have been associated with a rise in both obesity and eating disorders. Children form electronic friendships with the machines instead of friendships with the peers which results in sense of loneliness, isolation, sadness and irrelevant emotional disturbances. The television and other sources take away the time for sleep. The dreams after TV viewing are disturbed, with vivid TV images resurfacing and causing nightmares. The number of hours of television watched per day was associated with irregular naptime schedule ad irregular bedtime schedules. Television viewing may simply serve to displace sleep time, thus shortening sleep duration to unacceptable limits. The time spent by the child in television viewing may substitute for other less sedentary

and/or less passive activities (like playing outside, engaging in sports activities), resulting in poor-quality sleep. Watching television also affects one's health by replacing other activities and by slowing the metabolic rate. Television viewing leads to obesity in children and adults when it replaces other, more active pursuits, such as walking, biking, or simply playing outdoors. Excessive TV viewing at a young age may play role in attention deficit disorder (ADD). Television flickers at an average rate of once every 3.5 seconds. It has been indicated that the frenetic pace of television, the rapidly changing sound and images may overwhelm the nervous system of some young children and lead to hyperactive behavior and attention deficits.

With respect to the third objective, the study brings to light the existence of gender differences in video viewing. The males performed better as compared to females on the test of digit span. Females performed better on the test of visual memory as to males. Media is one of the major socializing factors with a great potential to influence children's developing imagination. The results clearly indicate that imaginative play is essential for the development of children. The culture helps in shaping the play activities and in return the formation of creative thoughts. The video viewing has a significant impact on creative imagination of both the sexes. The video viewing has significant effect on boys' emotional stability even though girls also use computers, television. Significant gender differences were also noted in emotional quotient. Females report higher scores on emotional intelligence as compared to males. Media portrayals exert stress and anxiety on females to grow up too quickly as there is growing checklist of ideals they have to adhere to. The girls are forced to grow at an unnatural pace in the society that is damaging their emotional well being. The results reported that video viewing had a significant impact on social relations of females. Television commercials promote gender stereotypes and unrealistic standards of female beauty and body shapes, thereby producing distorted body images in females. Physical inactivity such as television viewing is a major determinant of the current obesity epidemic. Therefore from the above discussion it can be concluded that prolonged video viewing has significant impact on females.

Summary of results

There was strong support for hypotheses that heavy viewers may poor as compared to light on cognitive, affective and behavioral processes. In other words, this research has revealed that there is a positive relationship between prolonged video viewing and detrimental impact on preadolescents. Since prolonged video viewing and

detrimental development of preadolescents are so closely dependent upon one another, we owe it to our children to afford them every opportunity to teach them critical viewing skills. We also need to offer assistance to parents by teaching in the manner of appropriate parental mediation skills, program selection, and discussion of television programs.

Obviously, since the medium reaches millions of children for hours each day, the ideal setting in which to learn about television viewing skills would be in the school system. Of course, many educators may state that school systems should focus on the basic skills of Reading, Writing, and Mathematics and teaching about television would add to the already over crowded curriculum. However, a great deal of information about those same subject areas could be accessed through television if only the children were shown how to access, organize, and evaluate available information.

Methodologically, this study provides a good base for other studies in this area. As we have very few studies highlighting the impact of video viewing on children in Indian settings. The experimenter believes this study shed some light and raised some important questions in the area of children's video viewing in India. The nature of Indian private television changed in a very significant and dramatic way in late 1990's. Indian television has suddenly become much more entertainment-driven, like the Hollywood-produced television series in America. The programming comprised Western entertainment imports and also Indian-produced serials, talk shows, game shows, and news and current affairs. The advent of the satellite dish has brought in new form of social arrangement. America's sitcoms, soap operas, reality shows, movie stars, fashion trends and music have changed the social, intellectual and psychological facet of Indians. Therefore, we must stimulate research in this area so behavioral science in India can keep pace with technology and developed nations.

Educational implications of the study

The present study has laid emphasis on the detrimental effects of heavy viewing which can be helpful for parents, teachers and counselors, so that they are able to channelize the potential human resources to the utmost. Cognitive, affective and behavioral test scores in heavy viewers are found very low. Therefore, the parents, teachers and authorities may take care of this fact and may extend such measures to improve cognitive, affective and behavioral development of preadolescents.

Parents can use this information in taming the programming appropriate for the children and understand the need to take the time to watch these programs with their children. They should take care to provide opportunities to engage in creative play for boys and girls in their home environment. Parents should allow children to play in their own way, and not with video and computer games. Therefore, allowing children free to find their own mode of play would facilitate development of creativity in them.

This investigation has educational implication for designing the curriculum and development of educational programs for children. Educators can emphasize the detrimental effects of heavy video viewing on young children and can recommend activities in school and home, based on children's developmental needs. The study can facilitate policy makers in the formulation of laws regarding video viewing. Although organizations exist to scrutinize the content viewed by children in our country, political interests make legislation and enforcement difficult. Therefore, the attentiveness among parents, educators and policy makers can direct in implementing the legislation in an effective manner. The study further reveals that fantasy play themes provided by our culture do not find a place in our pre school curriculum. It may lead them to a cultural crisis. To avoid this cultural crisis our curriculum may be oriented to accommodate events of play themes from our culture inspite of media portrayals.

Teachers and parents can be advised about the importance of early years of the child. Children must develop and refine small and large motor skills, depth perception and eye hand coordination. The strategies can be directed at helping children and adolescents to achieve coping skills by fostering resiliency, positive attachment relationships, emotional and intellectual intelligence that promote optimal development.

Another implication of the study is that policy makers can regulate broadcasters to practice the behavior which is in compliance with industry regulations and to ensure media companies to impart the information what is pre-eminent for children. This suggests that the present study is a basis of amelioration for parents, educators, policy makers, and counselors which can intensify the establishment of educational curriculum based programming to cater children's needs.

Suggestions for Further Research

The present study was mainly confined to the video viewing preferences of preadolescents and its impact on their cognitive, affective and behavioral processes. The full implications of the study can be ascertained only when it is supplemented by other studies. The following aspects may be incorporated in further research.

1. The present study is a cross sectional study, and a longitudinal study can be carried out to analyze long term impact of video viewing.
2. An experimental study on prolonged video viewing (Pre test & Post test paradigm) can also be attempted.
3. A study of emotional expressions, understanding emotional expressions, nature of emotions in relation to video viewing can be conducted.

The study has emphatically revealed the fact that heavy video stimulation is detrimental for cognitive, affective and behavioral processes of preadolescents. The present study needs to be elaborated to throw full light with the help of further research in the area. The investigator would consider herself amply rewarded if the findings of the study are used by future researchers and practitioners in pre- school education for improving current practices in pre-school education and for conducting more extensive researches relating to this crucial area.

Few Publications from the current investigation:

1. Ahuja, S., & Santha Kumari. (2008). Impact of Extended Video Viewing on Emotional Stability among Preadolescents. *Psychological Studies*. Vol.53, No. 3 & 4, 294-297.
2. Ahuja, S., & Santha Kumari. (2009). Prolonged Video Viewing and Emotional Intelligence: An experimental investigation. *Europe's Journal of Psychology*. www.ejop.org
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Dear Parents,
In connection with my doctoral research work I am trying to investigate the impact of Television viewing habits of children on their development. Following are some questions to be answered by you with respect to your child or children of the age range 9-12 years. I would be very grateful to you if you could answer these questions regarding your child/children's TV viewing habits and other personal information and send this questionnaire to your child's class teacher at the earliest. All information provided herein will be kept strictly confidential.
THANKS

TELEVISION VIEWING QUESTIONNAIRE

Name of the child: ..... Roll no. of the child: .....

Sex of the child: M/F; Date of Birth: Day ..... Month ..... Year ..... studying in class: .....

School Address: .....

Home Address: .....

Following statements are about your child and family's television viewing habits and other personal information pertaining to the child. Think about the past week in your child's life while answering 1-15 questions. If last week was unusual for a specific reason, choose the most recent typical week.

1. How many TV sets does your family own? .....
2. How many computers do your family own? .....
3. In which room are TV sets located (TICK [✓]) all that apply) Dining room (Eating area) ☐; Drawing / living room ☐; Parents bedroom ☐; Child's bed room ☐; Kitchen ☐; Others (specify) .....
4. Do you subscribe to cable service? Yes / No;
5. Do you own a VCR/VCD/DVD/? Yes / No
6. How many hours per week (Monday to Friday) on average does your child watch TV/VCR/VCD/DVD ? .....
7. How many hours per week (Monday to Friday) does your child use computer? .....
8. How many hours per weekend days (Saturday and Sunday) our child watch TV/VCR/VCD/DVD?
   Saturday ..... Sunday .....
9. How many hours per weekend days (Saturday and Sunday) you child use computer?
   Saturday ..... Sunday .....
10. How many hours per week day does your child use computer at school? .....
11. How many hours per week day (Monday to Friday) do you watch TV/VCR/VCD/DVD? .....
12. How many hours per weekend day (Saturday & Sunday) do you watch TV/VCR/VCD/DVD? .....
13. In which of the following activities does your child participate during the time period after school and before bedtime. (Tick [✓] all the apply). Please indicate the order of preferences the 3 activities your child prefers.
    Playing outdoors ☐ Playing with friends/siblings ☐ Playing with a computer ☐ Doing home work ☐
    Joining in organized activities ☐ Music or other lessons ☐ Watching TV ☐ Reading ☐
    Others (please specify) .....
14. What kind of programs does your child watch on TV

Cartoons	Horror movies	Family movies
Action movies	Family serials	Films songs
Advertisements	Trailers	Informative Programs (Discovery, National Geographic)

15. Does your family have rules about following viewing habits (check all that apply)
    Amount of TV (time wise) your child may watch
    Types of programs your child may watch

16. Does your child have difficulty in sitting still for certain period of time (hyperactive): ☐ Yes ☐ No
If yes then indicate the time of occurrence:
☐ 0-2 years ☐ 3-4 years ☐ 5-6 years ☐ 7-9 years ☐ 9-12 years

17. Does your child lack attention and concentration in day to day activities. ☐ Yes ☐ No
If yes, indicate the age of appearance:
☐ 0-2 years ☐ 5-8 years ☐ 9-12 years ☐ In recent years

18. Does your child show aggressive and explosive behaviour. Yes ☐ No ☐
If yes, then indicate:
☐ Occasionally ☐ Sometimes ☐ One in a while ☐ Very frequently

19. Does your child have any of the sleeping problems like frequent night mares disturbed sleep, frequent waking up from sleep. ☐ Yes ☐ No
If yes, indicate the time / age of occurrence:
☐ 2-4 years ☐ 4-8 years ☐ 9-12 years

20. Does your child have any kind of mental or physical illness at the time of birth and after that: ☐ Yes ☐ No
If yes, specify.
(a) age of appearance .....
(b) type of the problem .....

21. Does your child have any kind of observable behavioral problem: ☐ Yes ☐ No
If yes, indicate the age of appearance
☐ 2-4 years ☐ 5-8 years ☐ 9-12 years

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PROFORMA FOR INFORMED CONSENT FROM PARENTS

Respected Parents,

Myself, Simerpreet Ahuja, a Research Scholar in Psychology in the School of Management & Social Sciences a regular Ph.D. student in this Institute since 1st Aug., 2005. In my study entitled 'Impact of Extended Video Viewing on Cognitive, Affective and Behavioral Processes in Preadolescents' I am trying to investigate the impact of video viewing on the mental functioning of children of the age range 9-12 years.

I am thankful to you, for cooperating in filling up the T.V. viewing questionnaire, which was sent to you earlier.

Now I wish to inform you that I prefer to gather more information about various abilities and activities of your child. I assure you that your child will feel comfortable with these educational materials, which are in the form of games, or puzzles and the child will feel interested in doing these activities. The information collected will be kept strictly confidential. However if you wish to know about the child's performance, I will be pleased to provide you the feedback.

May I now request you to give me your kind consent by signing this form, to permit me to administer educational tests on your child. If you have any query, you may ask me in person or you can contact me on the following Address/Telephone Nos, I will be happy to answer your queries.

Thanking you in anticipation.

Simerpreet Ahuja

Simerpreet Ahuja
Research Scholar,
School of Management & Social Sciences
Thapar Institute of Engineering & Technology
Tele. No.- 0175-2393403
Mobile No.- 98727 31095

Parents sign, Name & Address

CHECKLIST FOR CHILDRENS' HABITS

Name of the child.....

Sex of the child: M/F Date of birth: Day..... Month..... Year..... Studying in Class.....

School Address .....

Home Address .....

Following statements are about your child's day to day habits and other personal information pertaining to the child. Think about the recent past in your child's life while answering questions. Please tick (✓) the appropriate one.

1. Does your child take a long time to fall asleep? Never/Once in a while/sometimes/ often
2. Does your child wake up many times each night? Never/Once in a while/sometimes/ often
3. Does your child wake up early and is unable to get back to sleep? Never/Once in a while/sometimes/ often
4. Does your child feel tired when wake up in the morning? Yes/ No
   If yes then indicate Once in a while/ sometimes /often
5. Does your child wake up all of a sudden due to some fear or nightmare involving life threats?
   Never/Once in a while/sometimes/ often
6. Does your child have a tendency to sleep more that is excessive sleepiness?
   Never/Once in a while/sometimes/ often
7. Does your child have a tendency of excessive eating while television viewing?
   Never/Once in a while/sometimes/ often
8. Does your child experience intense fear of gaining weight?
   Never/Once in a while/sometimes/ often
9. Does your child display distress or protest by not eating?
   Never/Once in a while/sometimes/ often
10. Does your child skip meals by forgetting, being busy or falling asleep at mealtimes?
    Never/Once in a while/sometimes/ often
11. Does your child show overall weakness, confusion, decreased concentration and fatigue?
    Never/Once in a while/sometimes/ often
12. Is your child choosy about food Yes/ No
    If yes then indicate Once in a while / sometimes/ often
13. Is your child overweight? Yes/ No
14. Does your child avoid eating meals with others; make frequent visits to bathrooms during or after meals?
    Never/Once in a while/sometimes/ often
15. What kind of food does your child eat while watching TV
    (Tick ✓all that a ply)
    Fast Food ☐ Chips ☐ Cold Drinks ☐ Chocolates ☐ Stuff advertised on TV
    Processed/ tinned food ☐ Any other specify.....
16. Does your-child -have a sense of loneliness isolation and sadness?
    Never/Once in a while / Sometimes /Often
17. Does your child have difficulty in social relations?
    Never/Once in a while / Sometimes /Often
18. Does your child have irrelevant fears emotional disturbance? Never/Once in a while / Sometimes /Often
19. Is your child restless or hyperactive? Yes/ No
    If yes then indicate Once in a while / sometimes/ often

(SIGNATURE OF PARENTS)
Name.....
Address.....
.....
.....