The Effect of Network and Public Television Programs on Four and Five Year Olds Ability to Attend to Educational Tasks

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This study examined the effect of network and public television programs on children's 1) ability to attend to a task, 2) children's time on task, and 3) engagement in rough and tumble play. 62 children were randomly assigned to one of three groups. One group watched Mister Rodgers Neighborhood, a Public television program, one group watcher The Mighty Morphin Power Rangers, a network television program, and one group watched no television for the treatment period and instead played with instructional materials. Results show that there was no significant difference on the attention variables between the Public television group and the instructional activities group. However, the network television program showed a significant difference with both the other groups. No differences were found on the rough and tumble variable. Implications for children's programming and environmental influences on attention are discussed.

Every year more and more children are being diagnosed as attention deficit hyperactivity disorder (ADHD) (Knowlton, 1998). ADHD is a congenital often inherited learning disability that can be treated with a drug called Ritalin (Prater, Pancheri, 1999). However, for many children that exhibit ADHD behaviors there is another explanation. Ritalin will not work with these children, because their inability to attend is learned.

Children's attention is developmental (Aldridge, Eddowes, and Kuby, 1994). Toddlers and preschoolers are not developmentally able to sit and pay attention for the amount of time that we would expect of a fifth grader. A general rule of thumb is that children can be expected to pay attention to someone or something for about double their age in minutes. So a 4 year old could be expected to pay attention for 8 minutes. Many of the ADHD complaints by teachers can be attributed to developmentally inappropriate curriculum for children that ask children to sit quietly and pay attention for longer periods of time than what could be expected developmentally (Aldridge, Eddowes, and Kuby, 1998).

However, just as with other aspects of development, attention does not develop in a vacuum. Children develop attention through interactions with other children, activities, adults, and the ever pervasive television (Aldridge, Eddowes, and Kuby, 1994). The fast pace of life at the turn of the millennium has shortened the amount of time that all people have to wait for anything. We have fast food, instant entertainment, instant information through the internet, and many other speedy conveniences. This fast paced environment can hinder children from developing a strong ability to sustain attention for an instructionally acceptable period of time. These children would then have trouble a classroom setting because of learned problems with their selective and adaptive attention.

This study examined four and five year old children to determine if the amount and

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type of television programs they are exposed to have any effects on their ability to attend to a task. While there is much evidence that ADHD has biological roots (American Psychiatric Association, 1994; Knowlton, 1998;Goldman, Genel, Bezman, and Slanetz,1998) , it is our contention that not all children who exhibit problems with attention have ADHD (Aldridge, Eddowes, and Kuby, 1994, 1998; Eddowes and Aldridge, 1993). These children may just not have been in an environment where their attention had an opportunity to develop to an acceptable level for our society. This research will examine the media's contribution to this lack of attention.

Review of Literature

There have been a number of studies that have studies children's ability to attend to the television in various situations. Sanchez, R. P., Lorch, Milich, and Welsh, (1999) investigated visual attention to story comprehension of televised stories in 27 4-6 year old children with attention deficit hyperactivity disorder (ADHD). Half of the subjects in each group watched the program with toys in the room, and the other half watched without toys. Visual attention to the television was recorded, and story comprehension was assessed by performance on cued recall questions. All subjects attended significantly less when toys were present, but the difference when toys were present was greater for ADHD subjects. The groups did not differ on recall of factual information when toys were absent. When toys were present, the control they showed no decrement in performance on factual questions, whereas the performance of ADHD subjects was significantly worse. On questions testing causal connections, the ADHD they performed more poorly than controls regardless of whether toys were present.

Lorch, and Castle, (1997) studied moment-to-moment variations in the engagement of young children's cognitive capacity by using televised material. Subjects were examined using a secondary task paradigm. 35 5-year-olds watched a 35-minute Sesame Street program containing 3 types of segments: normal segments, segments with scenes reordered, and segments with incomprehensible language audio tracks. While watching the program, children were asked to respond quickly to auditory probes distributed across all types of segments and positions within segments. Probe response times and visual attention were recorded. As indicated by longer probe response times, capacity was more effectively engaged if language was comprehensible, provided children were looking at television when probes were presented. If not looking, response times were equally fast across segment types. For normal segments only, there were increases in the engagement of cognitive capacity if a look at the television or the program content had been continuous for some time. Results provide evidence for, and important refinements of, the hypothesis that young children's ongoing comprehension is a major determinant of their attention to television.

In related research involving ADHD children and television Landau, Lorch, and Milich, (1992) conducted a study in which ADHD boys between the ages of 6-12 were compared to a control group to determine the effects of distracters on educational television viewing. Results revealed that in the presence of highly motivating toys the boys with ADHD paid less visual attention to the TV, but recall performance showed no significant difference. Without the distracters both groups showed similar attention behaviors. In comparing the younger boys to the older boys the younger boys from both groups were more affected by the toys being present. The length of the TV segments, along with the type of programming could be a factor in the results. However, this study indicates that children may learn to process auditorily when not attending visually. The strategic

processing of televised material may develop through the elementary school years.

Hallowell (1997) writes that it is possible that in our fast-moving society where everything has become instant that we are a nation suffering from culturally induced attention deficit disorder or "pseudo-ADHD". Pseudo ADHD has many of the same symptoms as true ADHD: a search for high stimulation, a high level of impulsivity, restless behavior and impatience, and an active fleeting attention span. With technology we now have access to anyone, anywhere at any time. But with this hyper connected electronic world, we have become disconnected personally. We no longer communicate face to face or sit down and talk, so people are feeling distracted and restless. The same symptoms associated with ADHD. He suggest that to determine if ADHD truly exists in one's life or if it just a side effect of today's world, one needs to slow down and connect with what is important to you. The answer lies in taking responsibility for a calmer, more connected lifestyle.

There are also a number of studies that have studies factors that could be either biological or environmental. The debate between whether ADHD is caused by biological factors or environmental factors was broadened with research conducted by Faraone, Biederman, Mennin, Russell, and Tsuang, (1998) They studied parents whose children were diagnosed with Attention Deficit Hyperactivity Disorder, a connection was made from parent to child. Eighty-four adults diagnosed with Attention Deficit Hyperactivity Disorder participated in a pilot study. Of the 84 adults, 31 had children. Of those 31 adults, 84% of the parents had at least one child with Attention Deficit Hyperactivity Disorder and 52% had two or more children with Attention Deficit Hyperactivity Disorder. Children whose parents had been diagnosed with Attention Deficit Hyperactivity Disorder faced a higher risk of having the disorder than siblings of children with Attention Deficit Hyperactivity Disorder. However it was undetermined if this was because of heredity or family influence.

Because of the increasingly large numbers of diagnosed cases, a great deal of research is focusing on whether the cause is environmental or biological. Margalit and Almougy (1991) investigated the relationship between home and environment and classroom behavior in students with learning disabilities and/or hyperactivity behavior. Results of behavior and environmental scales showed that families of hyperactive children were reportedly less controlling and less supportive. Families of children with learning disabilities only were characterized by dependent interpersonal relationships, as well as by more Authoritarian families who encouraged more achievement but less personal growth. Although further investigation is needed, the results of this study would support the theory that some hyperactivity behavior is affected by home and family environments.

On the biological side of the debate, Branch, Cohen, and Hind (1995) examined areas of the brain for causes of ADHD. Their focus was on right-versus left-hemisphere disfunction in relation to attention and concentration. However, there was no significance between left-and right-hemisphere disfunction on the ability to concentrate. The researchers supported previous studies showing that the ability to concentrate is based on the reticular activating system of the brain.

Other arguments hint toward an survival instinct mechanism. Many emotional and behavioral responses may not just be symptoms of the disorders, but may reflect adaptive responses of the organism to environmental demands. Examining ADHD in relation to evolutionary theories of biology and psychology may help explain the presence of the disorder in some children. ADHD is characterized by three symptoms: inatten-

tion, hyperactivity, and impulsivity.

According to the research of Jensen, Mrazek, Knapp, Steinberg, Pfeffer, Schowalter, and Shapiro, (1997) these symptoms can be adaptive in some instances. Increased motor activity may have been useful in an environment where one must constantly explore the surroundings for threats or opportunities. Being alert to danger and developing scanning and rapidly shifting attention was necessary in many environments to monitor threats and dangers. According to the authors, acting on impulse is making a quick response to environmental cues without considering the alternatives. Some responses are automatic and others are learned or adjusted. The animal that does not have the ability to adjust responses may have difficulty adapting to different environments and passing that on to the next generation. If humans adapt to their environment, perhaps attention can be influenced by environmental variables such as television viewing.

In our ancestral environment the three characteristics (increased motor activity, rapid scanning, and quick response) which make and organism "response-ready" were imperative to human survival. As our society became more industrialized and organized "response-ready" behaviors have become less adaptive. Success in today's environment is measured more by problem-solving strategies, restraint and control of impulsivity and energy (Jensen, et al., 1997). Studies of the effects of children's early development of "response-ready" traits are needed to understand the impact on children's attention systems of watching television and playing video games. Television emphasizes narrative, imagery, instant gratification and rapid emotional response, compared to school tasks that require logic, discipline, and sequence (Postman, 1993). Playing video games requires children to use a reactive from of attention when images flash across the screen every few seconds (Jensen, et al., 1997). Jensen and his colleagues hypothesize that shifting attentional or scanning behaviors can be "up-regulated" during early development, possibly at the expense of attentional systems of focus and selecting. A child in that situation is less likely to be prepared to attend to activities such as reading, listening to a story, or sitting quietly in a desk for extended periods of time.

This research study is not being conducted to answer the question of whether ADHD is Environmental or Biological. The evidence that clinical ADHD as described in DSM IV, has biological roots it convincing and vast (Goldman, Genel, Bezman, and Slanetz, 1998). However, there is evidence that not all children who are distractable or exhibit many ADHD type behaviors have ADHD. These children do not exhibit all the characteristics of the disorder and they do not respond to medication (Prater, and Pancheri, 1999). For these children the environment may be the major contributing variable in their short attention span (Eddowes, and Aldridge, 1993).

However , little research has been done on the effects of the attention patterns that television promotes, on other tasks that children perform. This study attempts to study that aspect of televisions influence on attention. Hooper, and Chang, (1998) studied the differences between network television shows for children and programs on public television. The durations and variability of changing events were analyzed for 20 min. each of 13 children's television programs. These programs included selections from both publicly and privately produced shows. Significantly different patterns of attentional demands were found between the programs. Public television programming is characterized by longer and more variable durations of sustained attentional events, while private television programming is best described as having fast-paced shorter events. Hooper and Chang (1998) also proposes that these differences could promote difficulties in

learning by school-age children and effect their ability to attend to tasks for longer periods of time.

This research study examined the effect of fast paced, action packed television programs on the attention patterns of four and five year old children. The study will try to determine if there is any effect on the children's attention and whether certain these fast paced television programs cause "pseudo ADHD" behaviors in young children. The findings could be used to better understand the rise in the incidence of ADHD behaviors in children over the last twenty years and to help refine the difference between "pseudo-ADHD" to which medication is not an effective strategy for treatment and medication treatable ADHD. The findings could also suggest new treatments for children who exhibit ADHD behaviors but do not respond favorably to medication.

Methodology

Hypothesis

1. Television shows that are fast paced cause children to have lower ability to attend to a task than shows that are more passive and slow paced.
2. Television shows that are fast paced cause children to spend less time on task than shows that are more passive and slow paced. .
3. Television shows that are fast paced cause children to engage in more rough and tumble play than shows that are more passive and slow paced.

Limitations

This was a convenience sample and therefore generalizability is limited. Observers were assigned three children to monitor and time. This was a necessity to keep the room from becoming overcrowded with adults, however some timing and scoring mistakes could have resulted. Differences between Mister Rodgers neighborhood and Power Rangers was made on a subjective qualitative basis rather that a with objective quantitative means. The sample size for this study was small because of lack of resources. This could limit the generalizability of the results. Future research is recommended with larger sample sizes.

Definitions

Rough and Tumble play - Play which includes destruction of objects, simulated fighting, and/or aggressive physical contact.

Time on task - The child is actively engaged in use of the materials for the general purpose for which the materials were intended.

Time off task - The child is not engaging in a designated activity or is using the materials in an inappropriate manner such as throwing materials and splashing water.

Time engaged in an activity - children can change activities as many times as they wish during the 30 min play session. The tie on a particular activity is started as soon as a child begins to interact with the objects and ends when the child walks away from the activity's vicinity. The time between ending the last activity and the start of the next activity is not measured and accounts for the differentiation between the children on total time on an activity.

Subjects

A volunteer sample of 62 children aged 4 and 5 years of age was recruited by offering the parents 2 hours of free child care on a Saturday afternoon. Children ranged in age from 4 years; 1 month; 23 days to 5 years; 7 months and 19 days. The sample was made up of 25 females and 37 males. 54 of the children were in a structured preschool or kindergarten setting for at least 1/2 of the day and the other 8 children did not meet the mandatory kindergarten entry age in September and were at home with the mothers. The sample was derived from a small rural community in northwestern Oklahoma.

The subjects were randomly assigned to one of three groups; Control group, Mister Rodgers group, and Power Rangers group. The first group or control group had 21 subjects assigned to it. The control group treatment consisted of allowing the children to interact with pre-service child development students in a room with activity areas to promote social, cognitive, and language development. The second group, consisting of 20 subjects, was shown a 30 minute episode of "Mister Rodgers Neighborhood". The third group, consisting of 21 subjects was shown an 30 minute episode of "The Power Rangers". The subject children, while in separate classrooms participated in the study concurrently. All 3 groups were interacting with the materials at the same time.

Treatment

The control group was assigned to a room arranged with child development activities. These activities consisted of the following:

1. A water table with 4 measuring cups, a water wheel, 2 boats, a sing and float tub which contained a ball of aluminum, a flat sheet of aluminum, a styrofoam ball, a rubber ball, metal washers, a pencil, a pen (heavy so it sinks), an orange, and an apple.
2. a table containing four math games. The game of Sorry using diced instead of cards, a card game called war, a path game containing two six sided diced, and a strategy games similar to "Tic Tac Toe"
3. a table containing finger paints.
4. a table containing play dough
5. a teacher reading the children's book in a comfortable corner.
6. it may believe play center setup as a McDonald's restaurant complete with cash register, imaginary food, and trays.
7. a table containing a collection of Legos

The control group spent the treatment half-hour in this room interacting with the materials there were two students of child development in the room at the same time with the students but not taking it active directing role. Student immoral elect and choose the activities that they would like to engage in freely. At the end of the half-hour of free play the students in the control group were then assigned to observer, one observer to three children, and were again allowed free selection of activities for another half an hour. During the second half an hour the observer recorded their time on task, the number of times they changed activities, and there participation in rough and tumble play.

The first treatment group were set on carpet squares in a room with no chairs and watched an episode of Mister Rodgers Neighborhood© for approximately 30 minutes. After the 30 minutes of watching the television show were completed the children or her moved to another room that had the identical activities that was mentioned for the control group. As with the control group, this first treatment group, the group was broken up into groups of three children in each group was assigned an observer. For the next half hour the observer scored using the same criteria as in the control group.

The second treatment group of was set on carpet squares in a room with no chairs and watched at episode of The Mighty Morphin' Power Rangers© for 30 minutes. The commercials were not deleted from the program. After approximately 30 minutes of watching the television show were completed the children were moved to another wrote that had identical activities as was mentioned for the first treatment group and control group. Data collection preceded in the same manner as with the first treatment group and the control group.

The two television shows, Mister Rodgers Neighborhood© and The Mighty Morphin' Power Rangers©, were selected

because of the visible differences between them based on the findings of Hooper, and Chang, (1998). Mr. Rodgers Neighborhood© is a passive show with walled seemed lengths, very few cuts, only two locations, Mister Rodgers house and the land of make believe. Mr. Rodgers Neighborhood© is accepted as one of the best shows for children on television today. It has won numerous awards for quality educational television. The Mighty Morphin' Power Rangers© television show, on the other hand, contains many fast paced action sequences, shorter seem lengths, and many different seemed locations. The us of this study is to examine some effects of contemporary television on children's attention. The Mighty Morphin' Power Rangers© television show seemed to be the most representative of this type of television popular with children in the 1990s.

Data collection and analysis

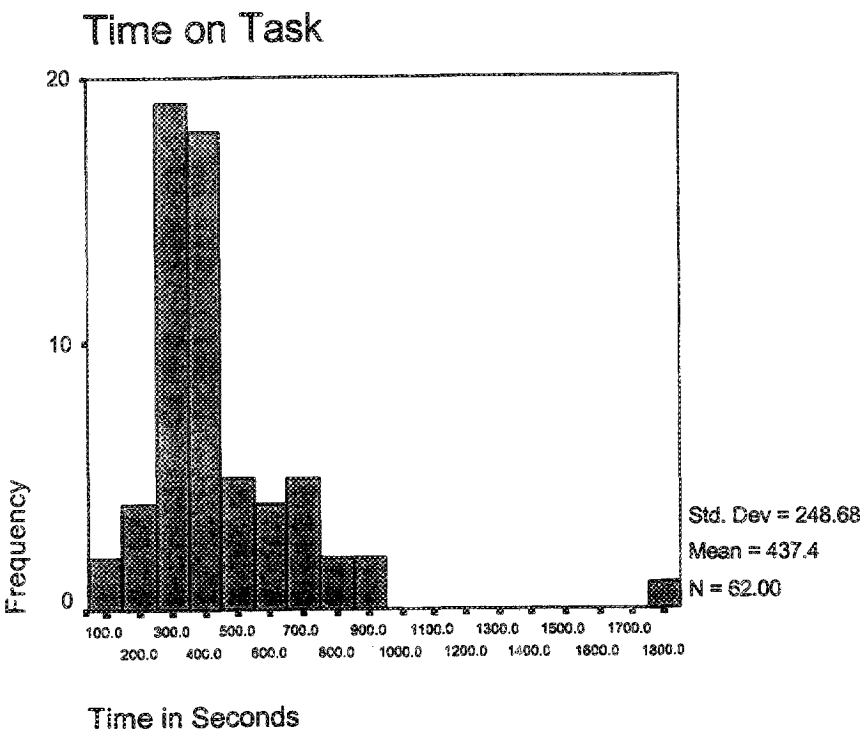
Data was collected by observers assigned to three children. They used a prepared form for each child to mark the number of times the children changed between the seven activities, the time each child spent at each activity, and the number of times children engaged in rough and tumble play. To help them collect this data each observer had a stop watch, a Clipboard, and a pen. Observers were trained to be close to the children as possible and still maintain view oval all three children and their charge. After the 30 minutes of observation the observers computed the average time on task for each child and marked that on the sheet. The sheets were then collected, coded with which treatment group or control group. The average time on task in seconds was computed by throwing out the time the child spent on the last activity and averaging the other times to get a mean time on task score. The time spent between activities was also not measured. Future studies may choose to examine this variable. The time for the last activity was discarded because it was interrupted by the end of the session not by the child's choice and so was not an accurate measure of the child's time on task and, therefore, would have skewed the data. The final mean score, number of times children changed tasks, and number of rough and tumble incidents were then entered into corresponding categories in SASS. for analysis.

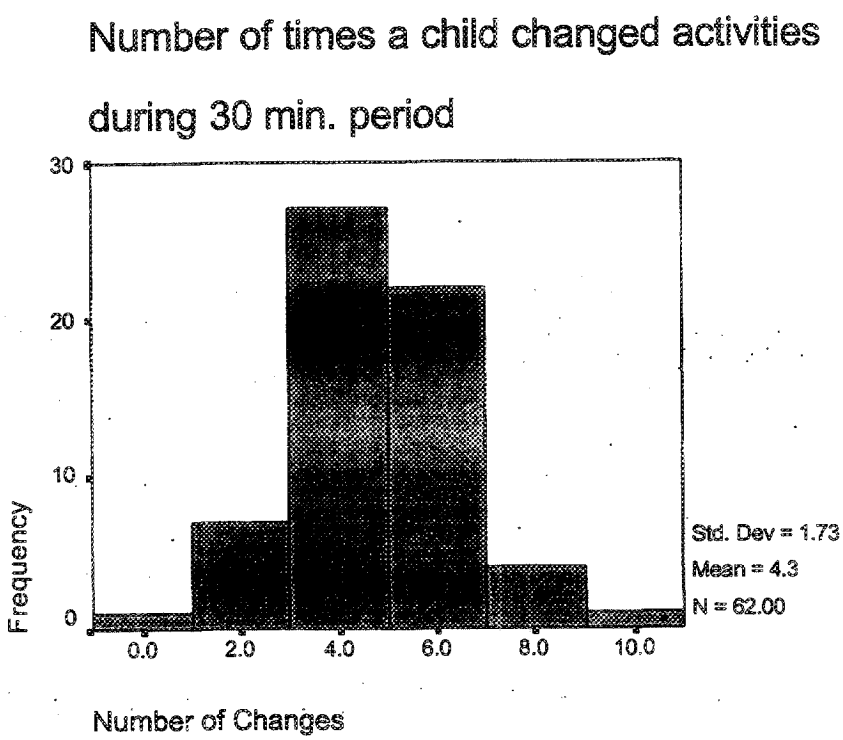
ANOVA was used to compare the means of the three groups on the three topic areas on which data was collected; time on task, number of times children changed activity, and number of times children engaged in rough and tumble play. Differences between among groups were examined using a two tailed test of significance at the =.05 significance level.

Descriptive notes were taken by the primary researchers who were observing the interactions between children in the classroom. This data will be used to give a richer description of the numerical data and attempt to offer explanations for the phenomenon.

Results

Frequency data for all 62 subjects were calculated for the dependent variables "time on task" and the "number of changes". Frequencies were not computed for the "rough and tumble" variable because of the low occurrence of this data. The frequencies for "time on task" show an overall mean of 437.4 with a standard deviation of 248.68. There was one outlier of 1800, as one student spent the whole 30 minutes on one activity. Frequency data for "number of changes" show an overall mean of 4.3 with a standard deviation of 1.73. Both of the variables show normal frequency distribution (figure 1). Comparison of means of each group for the three independent variables were calculated using SASS and One


Time on Task
20
10
0
Frequency
100.0
200.0
300.0
400.0
500.0
600.0
700.0
800.0
900.0
1000.0
1100.0
1200.0
1300.0
1400.0
1500.0
1600.0
1700.0
1800.0
Std. Dev = 248.68
Mean = 437.4
N = 62.00
Time in Seconds


Number of times a child changed activities during 30 min. period
30
20
10
0
Frequency
0.0
2.0
4.0
6.0
8.0
10.0
Std. Dev = 1.73
Mean = 4.3
N = 62.00
Number of Changes

ANOVA

time on task

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	376955.8	2	188477.917	3.275	.045
Within Groups	3395358	59	57548.447		
Total	3772314	61			

Multiple Comparisons

Dependent Variable: time on task

Scheffe

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
control	rodgers	111.42	74.95	.338	-76.60	299.64
	rangers	191.18*	74.95	.046	2.96	379.40
rodgers	control	-111.42	74.95	.338	-299.64	76.80
	rangers	79.76	74.03	.563	-106.15	265.67
rangers	control	-191.18*	74.95	.046	-379.40	-2.96
	rodgers	-79.76	74.03	.563	-265.67	106.15

*. The mean difference is significant at the .05 level.

Way Analysis of Variance.

Time on Task

ANOVA results for the independent variable "time on task" showed a significant difference at =.05 (F=3.275, df=2, Sig.=.045). Because the ANOVA showed a significant difference, the Scheffe post-hoc test was performed to determine which groups had significant differences. The Scheffe test revealed a significant difference between the control group and The Mighty Morphin' Power Rangers© group (Sig.=.046). No other significant differences were evident (figure 2).

Number of Changes

ANOVA results for the independent variable "number of changes" showed a significant difference at =.05 (F=3.822, df=2, Sig.=.027). Because the ANOVA showed a significant difference, the Scheffe post-hoc test was performed to determine which groups had significant differences. The Scheffe test revealed a significant difference between the control group and The Mighty Morphin' Power Rangers© group (Sig.=.038). No other significant differences were evident (figure 3).

Rough and Tumble Play

Observations of rough and tumble play yielded little numerical data for analysis. Most of the children did not engage in rough and tumble play ad defined in this study. The data that was collected showed no significant difference in the number of times children engaged in rough and tumble play (F=1.134, df=2, Sig.=276)(figure 4). The observational data of the types of rough and tumble play and other fantasy play yielded some interesting qualitative results.

The control group had 3 incidents of rough and tumble play. These were all the result of misuse of materials (two children threw markers at a Lego structure and one child splashed water on people repeatedly). All 8 of the incidents of rough and tumble play in The Mighty Morphin' Power Rangers© group were reenactment or role playing of the characters in the television show. Children would throw fake kicks and punches and fly around the room emulating the characters in the show. Also, all of the subjects that engaged in this behavior were male. The 6 incidents of rough and tumble play of

ANOVA

number of changes

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20.913	2	10.456	3.822	.027
Within Groups	161.426	59	2.736		
Total	182.339	61			

Multiple Comparisons

Dependent Variable: number of changes

Scheffe

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
control	rodgers	-1.07	.52	.125	-2.37	.22
	rangers	-1.36*	.52	.038	-2.66	-6.17E-02
rodgers	control	1.07	.52	.125	-.22	2.37
	rangers	-.29	.51	.855	-1.57	1.00
rangers	control	1.36*	.52	.038	6.17E-02	2.66
	rodgers	.29	.51	.855	-1.00	1.57

*. The mean difference is significant at the .05 level.

Figure 3 - Anova and Scheffe results for "Number of Changes"

ANOVA

ROUGH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.618	2	.409	1.314	.276
Within Groups	18.360	59	.311		
Total	19.177	61			

F

igure 3 - Anova results for "Rough and Tumble Play"

children in the Mister Rodger's Neighborhood group was less consistent in its themes. 2 of the incidents occurred from the misuse of materials (using yard sticks as swords), 1 occurred from a child making an airplane out of legos and then flying it around the room crashing it into peoples legs, and 3 were caused by children engaging in fantasy play as a group.

Discussion and Recommendations

Because of the small sample size of this study, it is recommended that replication with larger sample sizes be conducted. However even with the small sample size, the results do indicate that children's ability to attend and their time on task is effected by the amount and types of television that children watch. This finding could have great ramifications for children's programing and for the diagnosis of ADHD.

The findings suggest that children who watch television programs that are fast paced, filled with action, and exciting may influence children's ability to attend in a negative way. Programming decisions are made on an assumption that young children have short attention spans, and therefore shows must move quickly to keep their attention. Even teachers in primary grade classrooms feel that they need to make their lessons short, attractive, and entertaining to keep children's attention.

However, this is a circular argument. The findings of this study suggest that children are done a great disservice when teachers and programmers attempt to keep children's attention either on television or in the classroom by tailoring programming and lessons to fit a child' ability to attend. Children's ability to attend is developed through use and interaction. Children who are in an environment where they are greater times attending are expected and supported will develop their ability to attend in other situations. If lessons and programs do not respect the ability of the child to attend and develop their attention, children will never have an opportunity to expand their ability to attend.

This does not mean that developmentally appropriate guidelines for attention should be tossed out. On the contrary, they development of attention should be encouraged and supported by expanding the limits of the child's ability a little at a time as they are developmentally ready. A good analogy is building strength in a muscle. If the muscle is never exercised, it will atrophy and lose strength. However, if it is exercised by lifting weights it will grow and strengthen. When this muscle is exercised, appropriate weights are used. Heavy enough to require some effort, but not too heavy to where the muscle would strain and become injured. Attention can be seen the same way. Children need to exercise their attention, however, not have it developmentally strained by being asked to attend for periods longer then their developmental level will allow. There is an interplay here between environmental influences on attention and genetic developmental aspects of attention development.

This study suggests a rethinking of our traditional view of attention disorders. ADHD is a psychological diagnosis listed in the Diagnostic and Statistical Manual IV (Date) and is a condition with some biological origin. However, the diagnosis of ADHD in young children is quite difficult. The question "Is this child hyperactive (ADHD) or just activity hyper" is common (Aidridge, Eddowes 1998). This study suggests that some children who exhibit some ADHD behavior my just have not developed sufficient attention to deal with many of the demands of school. Future research may want to focus on this question to determine if training attention can help ameliorate some of the ADHD behaviors that children who do not have clinical ADHD may exhibit.

There are many environmental influences that have effects on a child's physical,

emotional, and cognitive development. This study suggests that the environment may also have an effect on children's ability to attend. If children's attention is not challenged and strengthened, they may begin to exhibit ADHD behaviors because of a weak ability to attend. Television is a major environmental influence in a child's life and this study suggests that certain programming can have effects on a child's attention. The suggestion that children's television viewing should be carefully monitored by parents is not a new one. However the suggestion that certain programs are worse than others in terms of developing attention is not only new but it is an important topic for discussion.

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