



## The Positive & Negative Effects of Media on Child Development

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### Introduction

In recent years, media, such as television, has rapidly expanded and become more incorporated in children's lives (Villani, 2001). At the same time, the developmental effects of media consumption have become an increasing concern for parents, educators and policymakers (Villani, 2001). The present review will focus on media in the form of screens that show television or video games. Effects of television and media have been studied an ample amount with its growing presence in younger generations. Nearly 80% of children were reported to watch television or videos on a daily basis (Poulain et al., 2018). There has been some evidence linking the increase in mental health issues with increased screen time (Zheng et al., 2024). At the same time, there is concern that developmental issues associated with media consumption might persist as children are raised with continuous exposure to screens. Not all effects of media are negative, however. There have been several case studies showing that children are able to express helpfulness and demonstrate positive behaviors towards others because of what they see on screens (de Leeuw and van der Laan, 2017). Classic studies like Albert Bandura's Bobo Doll experiment provide a theoretical foundation for understanding how observational learning from media can impact behavior, for example, through learning from mirroring (Bandura, 1961). Therefore, it follows that a similar effect might be found from children's consumption of screen media. Modern research continues to explore how different forms of media, including television and digital media, affect various aspects of child development. Children are affected by outside influences differently. Many of the studies investigated show different effects of media on children of various ages and developmental stages. By understanding these relationships, parents, educators, and policymakers can better navigate the complex media landscape and foster environments that support positive development for children. The continued widespread use of media is inevitable as we transition to an increasingly digital world. Being able to utilize media in healthy ways will prove to be a useful asset in the future. Looking at how media positively impacts children's learning and cognition can help researchers figure out the best way to incorporate media into children's lives.

### Media Over the Years

Over the years, the use of media has evolved dramatically. It has transformed from solely a form of information into a conduit for communication and a central element of daily life. Initially, technology such as the radio and television served as a simple channel for the spread of information rather than entertainment. As technology advanced, entertainment and TV industries have grown exponentially, introducing an array of diverse content. Access to smartphones, tablets, and streaming services have shaped the way people consume information and entertainment in their day to day lives. This shift in the role of technology in people's lives has led to an increase in screen time, especially among children, who now spend at minimum two hours or more engaged with digital devices (Richert et al., 2011). This integration of media has impacted the ways children learn, play, and behave.

## Impact of Media on Behavior (early childhood: 0-5 years old)

In young children under the age of 5 years, behavior and conduct issues have been noted as a common problem associated with media usage through the investigation of multiple studies. One study looked into the relationship between children's externalizing behavior and media usage across a period of six months and found that poorly behaved children are typically exposed to higher amounts of media (McDaniel and Radesky 2020). However, the direction of causality is unclear and potentially bidirectional. This study considered the possibility that many parents or caretakers use media such as televisions or tablets to regulate a child's poor behavior. For example, many parents might simply hand their child a tablet to control their boredom or public tantrums. In one study, parents/caregivers of 1-5 year olds were given a baseline media usage questionnaire to measure their child's television, tablet, and smartphone usage. Child behavior was reported by parents using the Child Behavioral Checklist and parenting stress was also measured. Greater externalizing child behavior was associated with greater parenting stress ( $r = 0.48, p < 0.001$ ) and increased child media use ( $r = 0.15, p < 0.05$ ). While no cause and effect relationships can be concluded, the overall trend suggests a relationship between higher media usage, parenting stress, and externalizing behavioral issues. However, it is important to note that higher media usage scores at baseline did not significantly correlate with more conduct problems six months later, suggesting a more complicated relationship between conduct problems and increased media usage. In contrast, a similar longitudinal study conducted in 2018 looked at a sample size of 527 children ages two to eight years old over the span of a year. Parents of these children reported media usage and conduct patterns through self report. One strength of this study is that the conduct questionnaire had a built in cut off score to separate the extent to which certain behaviors were considered "normal" in young children. Cut offs were determined by the tested population of children by what extent of each question was seen among the majority of healthy children. Results showed that baseline use of phones was associated with higher scores in the emotional problems scale ( $b=0.57, p<0.05$ ) and in the conduct problems scale at follow-up six months later ( $b= 0.65, p<0.02$ ). The baseline use of phones was also associated with higher scores in hyperactivity/inattention scale scores at follow up ( $b= 1.10, p<0.01$ ) (Poulain et al., 2018). Overall, both of these studies support the association of media being tied to behavioral and conduct issues among young children, though the exact direction of these relationships is not clear.

Another factor that might play a role in conduct or mood issues could possibly be the relationship of media use and sleep. Sleep duration and quality is an important aspect of life at all stages and is required for healthy functioning as it plays a big role in affecting mood, focus, and behavior (Seguin and Klimek, 2015). A study conducted in 2015 explored this topic in children ages three to five years old. A large focus of the study was on the impact of media and screen usage before sleep, but questionnaires given to parents also investigated some aspects of children's behavior. The study found that six out of ten children have a television or at least three electronics in their room at night, and this finding was associated with 45 less minutes of sleep per night (Seguin and Klimek, 2015). Results from the questionnaires also found a positive correlation between average time spent watching television and different negative behavioral categories (hostile-aggressive, anxious-fearful, hyperactive-distractible). The study mentions that a possible explanation for this could be the excessive usage of media before bedtime, making it harder for children to fall asleep and experiencing the effects of poor sleep quality the next day.

## Impact of Media on Behavior (later childhood: 6 years old and older)

The impact of media on behavior in children of 6 years and older is slightly different than the effects seen on children younger than 6 years old. A study observed children ages eight and nine over the course of a school year. Surveys were distributed and filled out by parents that asked about what children spent their time on screens viewing, for example educational programs, video games, entertainment television. A notable gender difference found was that boys were shown to have much higher usages of video games than girls, which is in line with various other studies (Mundy et al., 2016). Video game use was also associated with higher acts and attitudes of aggression among boys, but no such correlation was found with girls. Another interesting correlation was found in boys that each additional hour watching TV or playing video games was positively correlated with hyperactivity or conduct problems, and again there was no correlation in girls (Mundy et al., 2016). Another study used an intervention to look at the relationship between media usage and aggression (Robinson et al., 2001). Researchers assessed third and fourth graders in this study where there was a control group and an experimental group that experienced a TV turn off for ten days. A baseline media questionnaire was given to parents to look at the screen time of each child and a baseline aggression rating. One strength of the study was that this aggression rating was created from observing aggressive behaviors in the children on the playground during recess. Further, observations were done by researchers rather than teachers to improve ecological validity because researchers looked at children and their behaviors in their natural environments. Having researchers note these behaviors instead of teachers also helped to avoid bias. After the baseline information was collected, the experimental group was instructed to follow a ten day TV turn off which entailed a cut off from all media exposure. Parents were given pamphlets and activity ideas to encourage them to stay in the study instead of giving up on entertaining their child without screens. After the ten days were up, another media questionnaire and aggression rating scale was administered to compare results from before and after the intervention. Comparing the scores before and after the trial, researchers found that children displayed reduced aggression post-intervention compared to the control group (Robinson et al., 2001). A limitation of the study is that the ten day TV turn off meant all types of media were blocked out, and there was no way of knowing from the study what kind of media the child typically consumed beforehand. Finally, a third study looked at how media impacted helping behavior. A study was conducted where a group of children was split into a control and experimental group. The experimental group was shown a clip from the Disney movie *Cars*, while the control group wasn't shown anything. The movie clip chosen was one where a character in the movie was helping another one in trouble. Both groups were then given activity puzzles where they had to spot the difference between two pictures. The researchers found that the group of children that saw the *Cars* clip demonstrated more helpful behavior more frequently than the group that did not see a clip beforehand ( $b=0.510$ ,  $p=0.012$ ) and spent more time helping others as well ( $b=0.411$ ,  $p=0.034$ ) (de Leeuw and van der Laan 2017). As opposed to behavior in younger children (ages 2-6), studies in older children (ages 6 and older) provided evidence that the influence of media on behavior might more heavily depend on the type of content being consumed. This further highlights how the type of media content matters. The aggression typically found in video games is reflected in the males that spend more time playing video games, while the helpful behaviors in the Disney clip are projected in the ways children helped

each other in the following puzzle activity. Differentiating what kind of media is consumed would be useful as some is educational while other types are purely for entertainment purposes. Overall, media impacts on children six years and older seems to be based around the type of content being consumed.

### **Impact of Media on Learning and Language (0-6 Year Olds)**

In addition to the effects of media on child behavior, research has also largely considered how media might influence learning. One study titled, “An Isochronic Substitution Benefit Study of the Effects of Screen Time on the Cognitive Abilities of 3-6 Children” dove into comparing the time spent on a variety of activities. These activities were classified into learning screen time, nonscreen learning, sleeping, and exercise. Five hundred eighty three children aged three to six years old were given a standardized English and math test; the results were compared to a questionnaire completed by the caregiver of the child. Correlations between language and learning screen time ( $r = 0.1, p < 0.05$ ) and math ability and learning screen time ( $r = 0.105, p < 0.05$ ) were positively associated. Math ability was significantly negatively correlated with non learning screen time ( $r = -0.108, p < 0.01$ ), but interestingly enough, non learning screen time was associated positively with English language scores ( $r = 0.126, p < 0.01$ ). This supports the idea that screen time, regardless of learning or non-learning content, was associated with higher English scores, whereas the media content played a bigger role when measuring math ability (Zheng et al., 2024).

A separate study (Crawley et al., 2006) looked at how children can apply interactions they have with one television show with another television show, demonstrating their ability to learn social interactions. This study investigated children aged three to five years old and had them watch a popular children's show called *Blue's Clues*. The researchers chose this specific show because of its engaging nature, calling children to answer questions and help the main characters solve the mystery in each episode. Researchers looked at 92 children, half of which had been regular viewers of the show, and the other half had never been exposed to *Blue's Clues* prior to the study. Children were videotaped in their homes or daycares while watching *Blue's Clues* and interactions children had were analyzed. Researchers looked at verbal (answer questions, talking to the screen, ect.) and nonverbal interactions (nodding, pointing, dancing, hand gestures, ect.). Further, researchers excluded counting interactions that did not seem related to the show, and perhaps prompted by a different factor in their viewing environment. The episodes shown to viewers were also broken down into educational and entertainment sections in order to determine when children interacted with the show the most. The analysis indicated that the children looked more at educational content (95.7%) than they did at entertainment content (89.2%) (Crawley et al., 2006). This pattern supports the idea that children are able to pay attention to and interact with educational content on screens. Further, this study also found results showing that repeat viewers, those who had watched *Blue's Clues* in the past, were more likely to interact with the show. Researchers noted experienced viewers interacted approximately 0.93 times per minute while new viewers interacted 0.65 times per minute. A second part of the study was followed up by episode specific quizzes that tested the children's ability to obtain information from the show. Questions were designed to be only answered from the episode and not answerable from general or past knowledge. The results found that experienced viewers were able to answer questions more accurately than

inexperienced viewers in both typical and unique content question types; how this transfers to other types of learning remains to be explored.

A third study investigated the relationship between electronic media and speech/language delay in children. Four hundred thirty five children were tested and all children were given a baseline speech and ADHD test. ADHD was seen in 9.2% of children using media compared to 5.1% who were not using media (Salunkhe et al., 2021). This study also found an interesting pattern between language ability and media use, where the lowest level of language delay occurred in children who used between 1 and 3 hours of media per day. Those who did not use media in the form of television, phones, laptops, or tablets had a language delay at a rate of 23.4%. As screen time increased to up to one hour, the rate was 22.2%, between one and three hours of screen time was 5.7%, but for three hours or more the language delay rate shot up to 28.4%. This shows an interesting nonlinear pattern where language delay seems to be inversely related with screen time up to a certain limit, and that screen time of more than three hours had a negative impact on language or speech development. However, this study had several limitations, as the study failed to mention how language delays were measured and classified. Further, there was not nearly as much research in older children about language learning, as language acquisition is usually complete at older ages.

### **Media Usage Versus Time Spent on Other Activities & Social Interactions (3-12 year olds)**

Another studied aspect of media influence on children is how usage correlates with social interactions and other activities. A big theme seen when looking at media usage, was that the more time spent on media was correlated with children spending less time on other activities. This is not surprising however, as the media and entertainment industries have expanded so much there is something that can appeal to anyone and everyone. Interestingly, historical studies might give an interesting perspective, where other variables could be more tightly controlled. This is why a specific study done in 1978 is so interesting to look at now. One study conducted in 1978 looked at three different towns controlled for various factors such as size, socioeconomic status diversity, and more. The main difference between the towns was the number of channels available to them on the television. The first one had zero channels, the next had one, and the last town had two available channels. Families with children under twelve years old were investigated and interviewed about their perceptions of television. Researchers also asked about how long the children spent on doing certain activities such as reading books, comics, newspapers and listening to the radio and records. The data supports that there was a general decrease in reading in the town that had the most channels available, but mainly a decrease in the amount of time spent reading comics, but not reading for school or learning (Murray and Kippax, 1978). A possible explanation for this could be that because of the availability of channels, at least one served as entertainment, so the time children spent reading comics as entertainment was replaced by television. This is notable to look at however because the research also indicated that the amount of media a child consumed had no impact on their socialization or the time they spent playing outside or playing games with their friends (Murray and Kippax, 1978). This pattern would not be applicable today because almost every town has access to hundreds of television channels and streaming content online. From the interviews conducted, many parents and children said that they felt as though the media helped them with school and in increasing their knowledge of the world. Because of the time period this study was conducted, these results might be found because technology such as the radio and television



was used primarily for communicating worldly news and information. With this in mind, it is easy to see why many people in the past felt as though media such as the television and radio were educational and beneficial, which might not be applicable today.

A more recent study also similarly looked at the correlation of time spent on different activities in comparison to media usage. This study was conducted through a random telephone number dialing process. The qualification for participating was that the caller's children had to be under six years old. Once qualified, they would be asked a series of questions to collect data about how much time their child spent on watching television, listening to music, reading, playing video games, playing outside, and other activities. The results of this study are in line with the previous study where households with more access and higher screen times were less likely to spend time reading (Vandewater, 2005). Further, children three to six year olds in households that spent more time watching television were on average less likely to be able to read (Vandewater, 2005). Also in line with the previous study (Murray and Kippax, 1978), this study found no correlation between television and media time to how long children played outside or with toys (Vandewater, 2005). These studies looking at time spent on various activities in comparison to media usage have both classified playing outside and playing with toys as socialization in the sense that children are interacting with the people around them, so it remains to be determined whether media might replace more direct forms of socialization. Another interesting finding from this study is that households that watched more television also had more positive attitudes towards media.

## Conclusion

Looking at the impact of media on children's development through the lens of language and learning, cognition, behavior, and time spent on other activities, it is clear to point out common themes within each category. The studies examined reveal that screen time might impact learning and developmental outcomes in children differently based on content and duration. Overall, higher engagement with educational screen content shows a positive correlation with language and math skills, however there is a risk of excessive screen time where beyond a certain threshold, it is associated with the development of speech delays and ADHD. More engaging and interactive media such as children's television shows might enhance learning especially if children have repeated exposure to the content, improving the cognitive benefits. In the same way, non-educational screen time, especially in excessive amounts can be associated with negative developmental effects. Studies also consistently link increased media usage with behavioral and conduct issues in young children. Research points to the idea that higher media exposure, especially before bedtime is associated with greater externalizing behaviors, emotional problems, and conduct issues, potentially mediated by disruptions in sleep. Adding on, elevated media usage positively correlates with increased parents' stress. Overall, these studies highlight an important relationship between media consumption and negative behavioral outcomes in children. Also an important aspect of the findings is the type of content being consumed. The studies have revealed that violent video games are linked to an increase in aggressive behavior and hyperactivity, especially in boys. In contrast, educational and prosocial content, for example that seen commonly in Disney movies, can help promote helpful behaviors. Research comparing media exposure with behavioral outcomes supports that reducing media usage can decrease aggression in children. Noting the type of content consumed by children is important, as it shows that not all media affects children in the same



way. Rather, it varies with the type of content. Lastly, studies show that higher amounts of media often replaces the time spent on other educational activities such as reading, but in the studies reviewed here, does not decrease socialization in a significant way. Historical data shows a decrease in reading time with the increase in television, reflecting the replacement of traditional entertainment such as comics. More recent studies do support this as well by indicating higher screen times correlate with less reading, but not necessarily less time spent playing with toys or outside. Adding on, a common pattern is that households with more media exposure tend to have more positive attitudes towards media. Overall, while the media may reduce the time spent on certain activities, the reviewed research does not suggest it has an impact on social activities, but further work is necessary to determine whether this holds in the modern era of streaming media.

### **Limitations**

A common limitation to many of the studies examined is the use of self report to measure screen time and media consumption. Most of the studies that looked at screen time were based on a self report questionnaire asking them how long they spent viewing or consuming different content. People may have a warped reality of how much time they spend watching television or playing video games as it is very easy to lose track of time. Another limitation is that aspects of behavior, learning, and cognition are hard to measure and have been looked at using different measures by different studies. Further, in the modern day, it is extremely difficult to find a control group that has had no exposure to media, making it difficult to distinguish the temporal effects of media on development about how viewing media during certain developmental stages might influence behavior and learning.

### **Future Research**

As there is much research being done on the impacts of media on child development and the overall psychological impacts of media on people, it would be helpful to use some resources to look at the long term effects of media. As previously elaborated, the extreme incorporation of media into everyday life is a relatively new concept, and has boomed since the late 1980's and 1990's. A compilation of several studies investigated have supported the claim that higher amounts of exposure is needed for learning to occur from media compared to learning from a physical teacher or demonstration and that it can affect learning in children. Most of the people that have grown up with media are still very young, so the long term effects into late adulthood are not yet studied in depth, making this an important area for future investigation.

## References

- Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology*, 63, 575-582.
- Crawley, A. M., Anderson, D. R., Santomero, A., Wilder, A., Williams, M., Evans, M. K., & Bryant, J. (2002). Do children learn how to watch television? The impact of extensive experience with Blue's Clues on preschool children's television viewing behavior. *Journal of communication*, 52(2), 264-280.
- de Leeuw, R. N., & van der Laan, C. A. (2018). Helping behavior in Disney animated movies and children's helping behavior in the Netherlands. *Journal of Children and Media*, 12(2), 159-174.
- McDaniel, B. T., & Radesky, J. S. (2020). Longitudinal associations between early childhood externalizing behavior, parenting stress, and child media use. *Cyberpsychology, Behavior, and Social Networking*, 23(6), 384-391.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.
- Murray, J. P., & Kippax, S. (1978). Children's Social Behavior in Three Towns with Differing Television Experience. *Journal of Communication*, 28(1), 19-29.
- Nobre, J. N., Vinolas Prat, B., Santos, J. N., Santos, L. R., Pereira, L., Guedes, S. D. C., ... & Morais, R. L. D. S. (2020). Quality of interactive media use in early childhood and child development: a multicriteria analysis. *Jornal de pediatria*, 96, 310-317.
- Poulain, T., Vogel, M., Neef, M., Abicht, F., Hilbert, A., Genuneit, J., ... & Kiess, W. (2018). Reciprocal associations between electronic media use and behavioral difficulties in preschoolers. *International journal of environmental research and public health*, 15(4), 814.
- Richert, R. A., Robb, M. B., & Smith, E. I. (2011). Media as social partners: The social nature of young children's learning from screen media. *Child development*, 82(1), 82-95.
- Salunkhe, S., Bharaswadkar, R., Patil, M., Agarkhedkar, S., Pande, V., & Mane, S. (2021). Influence of electronic media on speech and language delay in children. *Medical Journal of Dr. DY Patil University*, 14(6), 656-661.
- Sanders, M. R., Montgomery, D. T., & Brechman-Toussaint, M. L. (2000). The mass media and the prevention of child behavior problems: The evaluation of a television series to promote positive outcomes for parents and their children. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41(7), 939-948.





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- SANDLER, A. D. (2001). Effect of reducing children's television and video game use on aggressive behavior. *Journal of Developmental & Behavioral Pediatrics*, 22(4), 266.
- Séguin, D., & Klimek, V. (2016). Just five more minutes please: electronic media use, sleep and behaviour in young children. *Early Child Development and Care*, 186(6), 981-1000.
- Vandewater, E. A., Bickham, D. S., Lee, J. H., Cummings, H. M., Wartella, E. A., & Rideout, V. J. (2005). When the television is always on: Heavy television exposure and young children's development. *American Behavioral Scientist*, 48(5), 562-577.
- Villani, S. (2001). Impact of media on children and adolescents: a 10-year review of the research. *Journal of the American Academy of child & adolescent psychiatry*, 40(4), 392-401.
- Zhenya, C., Aifeng, Z., & Ling, W. (2024). An isochronic substitution benefit study of the effects of screen time on the cognitive abilities of 3–6 children. *Frontiers in Psychology*, 15, 1421341.