Research Article

The Effects of Watching Children's Animated Cartoons on the Aggressive and Prosocial Behavior of Primary School Pupils

Gonisha Ong Mei Ling[1]*, Muhamad Syawal Bin Amran [2]

[1] Faculty of Education, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor Malaysia; p130215@siswa.ukm.edu.my

[2] Faculty of Education, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor Malaysia; syawal@ukm.edu.my

*Corresponding Author

Abstract: *Cartoons have long been a beloved source of entertainment for children, yet concerns about their influence on children's behavioral development are increasingly coming to light. This study investigated the impact of exposure to selected animated cartoons on the aggressive and prosocial behaviors of primary school children. Using a quasi-experimental design, a treatment group (exposed to animated cartoons) was compared to a control group (watching documentaries). Data analysis using the Wilcoxon signed-rank test revealed significant reductions in both physical and verbal aggression among children in the treatment group, accompanied by significant increases in prosocial helping and sharing behaviors. In contrast, the control group showed no significant changes in any of these behaviors. These findings align with Bandura's social learning theory, supporting the role of observational learning and imitation in shaping children's behaviour. The results suggest the potential for utilizing thoughtfully designed animated media as an intervention to promote prosocial behaviour and mitigate aggression in children. Further research should explore the long-term impact of such media exposure, delve into the mechanisms underlying imitation, and investigate the influence of individual and contextual factors on behavioral responses.*

Keywords: animated cartoons, children, aggressive, prososial, behaviour, imitation.

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1. INTRODUCTION

In the era of modernization and digitalization, the enhancement of telecommunications infrastructure allows children to watch their favorite cartoons not only through television screens but also through various other technologies such as mobile phones and tablets, which indirectly increases the amount of time children spend watching and learning through these cartoons every day (Nur Fatima Wahida Mohd Nasir & Hajar Abdul Rahim, 2021). Nowadays, with the internet, everything can be watched endlessly. The widespread capability and accessibility contribute to the prevalence of smartphone usage among children, who often access cartoons and other animated content on these devices due to the cost-effectiveness for families and the portability of the technology. This is supported by statistics from the Malaysian Communications and Multimedia Commission in 2021, which reported a penetration rate of 94.8% across all socioeconomic groups (Muhammad Alif Redzuan Abdullah, 2023). There are various types of animated cartoons in the market today, but selecting the appropriate cartoons is important to ensure that the influence left by these cartoons has a positive impact on the behavior formation of children. This is because animated cartoons have the potential to influence

children's behavior (Zhang, 2021) and children are often influenced by what they observe, especially in the early years of their lives.

Cartoons have been a popular form of entertainment for children for many years, but there are growing concerns about the impact of cartoons on children's behavior. This can be evidenced by an incident on May 26, 2023, in Hunan, China, where a four-year-old child jumped from his 26th-floor home while holding an umbrella (Yeap, 2023). The child's actions were believed to be imitated after watching the cartoon 'Tom and Jerry'. Bandura (1977) emphasized the significant impact of animated cartoons on children's behavior patterns, where the child imagined he would land safely on the ground if he jumped while holding an umbrella after imitating the actions of the model in the animated cartoon. Imitation can serve as a tool for learning and behavior through observing others or other symbolic models such as television and then being reinforced. Bandura (1965) in Woolfolk (2016) highlighted that to successfully imitate a model, one must pay attention to the model, have a way to retain what has been seen in symbolic form, and have the motor skills needed to reproduce the behavior. Therefore, it is important to identify and monitor the content of children's cartoons to reduce their exposure to negative behaviors and maximize exposure to positive behaviors that can support their healthy development (Choi & Kim, 2024).

Malaysian children are also not exempt from the developments of globalization. According to Balraj-Ambigapathy (2000) in the study by Shazleen Mohamed and Ahlam Abdul Aziz (2021), Radio Televisyen Malaysia (RTM) produced its first animated TV cartoon, Usop Sontorian, in 1995, and Upin and Ipin since 2007 have attracted young viewers to this day. Although the storyline is simple and entertaining, these animated cartoons successfully instill values and education (Shazleen Mohamed; Ahlam Abdul Aziz, 2021). The emergence of local animations that have penetrated the global market has great potential and influence, especially on the target audience, namely children (Aminnudin Saimon; Haura' Faris; Nur Aqilah Husna Safuan; Nurain Syamila Mohd Zamri, 2024). In this regard, children's television programs have the potential to unite children of various ages, values, and backgrounds. Nur Fatima Wahida Mohd Nasir & Hajar Abdul Rahim (2021) in their study found that when children have more access to media in Malaysia, there is a great responsibility on local animation companies and society to maintain good socio-cultural values in the animated cartoons produced so that the younger generation can practice noble principles. Children tend to do what they see others do, so the models they observe influence their behavior. Animated cartoon characters that can be closely related to social reality are more likely to influence children's behavior and the imitation practiced because they resemble their peers (Bailey & Schloss, 2024).

The purpose of this study is also due to the existing literature on the effects of media on children's behavior formation, which shows a lack of research on the effects of aggressive and prosocial behavior in local children's animated cartoons on children's behavior formation. Previous studies in the field of local animated cartoons have shown that more focus is given to moral values (Muhammad Alif Redzuan Abdullah, 2023), language learning (Nur Fatima Wahida Mohd Nasir; Hajar Abdul Rahim, 2021), and cultural values (Shazleen Mohamed; Ahlam Abdul Aziz, 2021). However, it is important to further explore how the behavior of characters in local animated cartoons can influence viewers, especially in the formation of children's behavior, to understand the impact comprehensively. In this regard, children who witness aggressive behavior that is punished usually exhibit such behavior less than those who see it rewarded or without any clear consequences (Bandura, 1973). This explains how animated cartoons can influence the formation of children's aggressive and prosocial behavior. Therefore, the formation of children's behavior in the study is important to help maximize their developmental potential. A young generation educated with the right mold can positively influence

the nation's development. Thus, sustainable national development must begin with the development of an excellent soul.

Therefore, the results of this study are believed to benefit many parties, including psychologists, other researchers, educators, parents, and the mass media, especially those in the world of animated cartoons, to gain a clear picture of the impact of watching animated cartoons on the formation of aggressive and prosocial behavior among primary school pupils. Therefore, this study is conducted to answer the following questions:

1. How do children's animated cartoons influence aggressive behavior among children?

2. How do children's animated cartoons influence prosocial behavior among children?

3. To what extent is there a difference in the behavior of children who watch selected animated cartoons compared to those who do not (control group)?

2. METHOD & MATERIAL

This study is a quasi-experimental design using a quantitative approach. According to Creswell & Creswell (2023), experimental research aims to determine whether a specific treatment affects outcomes. In this study, the researcher provides a specific treatment to one group, does not provide the treatment to another group, and then determines how both groups score on the outcomes. The independent variable is the pupils' exposure to episodes of animated cartoons containing aggressive and prosocial behavior, and the dependent variable for this study is the formation of pupils' behavior. This study aims to observe the effects of watching selected animated cartoons on the aggressive and prosocial behavior of primary school pupils. To measure the impact of animated cartoons on the formation of aggressive and prosocial behavior among children, data will be analyzed using pre- and post-tests to obtain feedback from the study respondents to address the research questions. Table 1 shows the two groups involved in this study, namely the treatment group and the control group.

Table 1: Quasi-Experimental Design

Type of Group	**Test Conducted**	
Control Group	Pre-Test	Post-Test
Treatment Group	Pre-Test	Post-Test

A simple random sampling method was used for selecting the study sample. Respondents were required to answer pre-tests and post-tests distributed through worksheets. A total of 60 out of 63 pupils from a primary school in the Papar district, Sabah, were selected to be respondents. The simple random sampling technique was used as the selection involved respondents suitable for the purpose of the study. The respondents consisted of pupils aged 7 to 12 years, who were in grades 1 to 6. The respondents were randomly selected and divided into two groups with equal numbers for this study. To obtain more accurate study results, both groups, namely the treatment group and the control group, had similar socio-cultural and anthropological characteristics. The treatment group was exposed to episodes of animated cartoons containing aggressive and prosocial behavior, while the control group was shown documentary videos. Before the treatment process was implemented, both groups, the experimental group and the treatment group, underwent pre-tests to select scenes that represented their daily behavior.

This study involves pre-tests and post-tests. For both the treatment and control groups, the pre-test is conducted simultaneously for 30 minutes. The post-test is conducted after both groups watch the

videos shown simultaneously. The treatment group watches animated cartoons that display aggressive and prosocial behavior, while the control group is shown a documentary video about wildlife. An official letter was obtained to explain the study procedure. The experimental session begins with an introduction and briefing about the study, the study title, the allocated time, and informed consent. After that, each participant from the treatment and control groups answers the post-test for 30 minutes. Participants are instructed to evaluate their responses based on the video shown. Both tests (pre-test and post-test) are conducted in the classroom during school hours. Then, to identify the significant relationship between gender and types of aggressive and prosocial behavior in this study, an analysis using the Chi-Square test is conducted. Meanwhile, to assess the intervention's effect on pupils' behavior formation, the Wilcoxon Signed Ranks test is performed on the post-test for both the control and treatment groups.

The pre-test and post-test are conducted using a study instrument in the form of pupil worksheets. The pupil worksheets are adapted from questionnaires for aggressive behavior (Buss & Perry, 1992) and prosocial behavior (Brazzelli, Farina, Grazzani, & Pep, 2017) to conduct the study involving children aged 7 to 12 years. This study instrument is designed to explore the extent of the influence of aggressive and prosocial behavior among primary school children after watching the animated cartoons shown. Therefore, pupils are required to choose situations/scenes from the animated cartoons that resonate with them, where they have a tendency to imitate the behavior in the given worksheet. Imitation of behavior in this context, according to Bandura (1977), is associated with various intrinsic needs to act and know, the desire to reproduce actions that differ partly from existing schemas, and respect for the model. Thus, when pupils observe the desired behavior model, they form ideas about how response components must be combined and sequenced to produce the new behavior. There are 10 items constructed in the study instrument, covering 5 situations/scenes of aggressive behavior such as physical aggression (3) and verbal aggression (2), and 5 items based on prosocial behavior such as helping (3) and sharing (2). After the intervention period, the post-test using the same pupil worksheet is conducted for both groups simultaneously.

3. FINDINGS

To identify the significant relationship between gender and types of aggressive and prosocial behavior in this study, an analysis was conducted using the Chi-Square test. Meanwhile, to assess the intervention's effect on pupils' behavior formation, the Wilcoxon Signed Ranks test was performed on the post-test for both the control and treatment groups. Table 2 shows the Chi-Square test results, and Table 3 shows the Wilcoxon Signed Ranks analysis.

Table 2: Chi-Square Test Analysis

Gender			
	Observed N	Expected N	Residual
Male	28	30.0	-2.0
Female	32	30.0	2.0
Total	60		

Statistical Test	
	Gender
Chi-Square	.267[a]
df	1
Asymp. Sig.	.606

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 30.0.

The Chi-Square test results for the gender variable show that the Chi-Square statistic is 0.267, with degrees of freedom (df) of 1, and the asymptotic significance (p-value) is 0.606. The p-value (0.606)

is much greater than the significance level of 0.05. This means we fail to reject the null hypothesis. There is not enough statistical evidence to conclude that there is a significant relationship between gender and types of aggressive and prosocial behavior compared in this Chi-Square test. The small Chi-Square value and high p-value support this conclusion.

Table 3: Wilcoxon Signed Ranks Test Analysis

Ranks				
		N	Mean Rank	Sum of Ranks
PhysicalAggression_post - PhysicalAggression_pre	Negative Ranks	21[a]	13.95	293.00
	Positive Ranks	4[b]	8.00	32.00
	Ties	35[c]		
	Total	60		
VerbalAgression_post - VerbalAgression _pre	Negative Ranks	20[d]	11.85	237.00
	Positive Ranks	2[e]	8.00	16.00
	Ties	38[f]		
	Total	60		
ProsocialHelping_post - ProsocialHelping_pre	Negative Ranks	1[g]	4.50	4.50
	Positive Ranks	12[h]	7.21	86.50
	Ties	47[i]		
	Total	60		
ProsocialSharing_post - ProsocialSharing_pre	Negative Ranks	0[j]	.00	.00
	Positive Ranks	15[k]	8.00	120.00
	Ties	45[l]		
	Total	60		
a. PhysicalAggression_post < . PhysicalAggression_pre				
b. . PhysicalAggression_post > . PhysicalAggression_pre				
c. . PhysicalAggression_post = . PhysicalAggression_pre				
d. VerbalAgression_post < VerbalAgression_pre				
e. VerbalAgression_post > VerbalAgression_pre				
f. VerbalAgression_post = VerbalAgression_pre				
g. ProsocialHelping_post < ProsocialHelping_pre				
h. ProsocialHelping_post > ProsocialHelping_pre				
i. ProsocialHelping_post = ProsocialHelping_pre				
j. ProsocialSharing_post < ProsocialSharing_pre				
k. ProsocialSharing_post > ProsocialSharing_pre				
l. ProsocialSharing_post = ProsocialSharing_pre				

Statistical Test[a]				
	Physical Aggression_ post – Physical Aggression_pre	Verbal Agression_post – Verbal Agression _pre	ProsocialHelping_ post- ProsocialHelping_ pre	Prosocial Sharing_post –Prosocial Sharing_pre
Z	-3.625[b]	-3.743[b]	-2.951[c]	-3.520[c]
Asymp. Sig. (2-tailed)	.000	.000	.003	.000
a. Wilcoxon Signed Ranks Test				
b. Based on positive ranks.				
c. Based on negative ranks.				

The Wilcoxon signed-rank test was conducted to evaluate the effects of animated cartoons on physical aggression, verbal aggression, prosocial helping, and prosocial sharing. This study examined

the differential effects of selected animated cartoons on children's aggressive and prosocial behavior. Participants were randomly assigned to either the treatment group (watching selected animated cartoons) or the control group (watching documentary videos). These findings suggest that exposure to animated cartoons is associated with a reduction in aggressive behavior and a simultaneous increase in prosocial behavior.

From the analysis results, the treatment group showed a significant reduction in both aggressive behaviors, namely physical aggression ($Z = -3.625$, $p < .001$) and verbal aggression ($Z = -3.743$, $p < .001$), as well as a significant increase in prosocial behaviors such as prosocial helping ($Z = -2.951$, $p = .003$) and prosocial sharing ($Z = -3.520$, $p < .001$). Conversely, the control group did not show significant changes in any of the four types of behavior, with p-values for all behaviors being > 0.05. Specifically, the control group showed a non-significant trend towards a reduction in participants' aggressive behavior and an increase in prosocial behavior, but these trends did not reach statistical significance.

4. DISCUSSION

The findings on the effects of animated cartoons on pupils' behaviors such as physical aggression, verbal aggression, prosocial helping, and prosocial sharing have several important implications for child viewers, especially when linked to Albert Bandura's observational learning theory (1965). According to Bandura, observational learning involves four main processes: attention, retention, reproduction, and motivation (Bandura, 1977). The results showing significant reductions in aggression and increases in prosocial behavior in the treatment group exposed to animated cartoons are highly relevant to Bandura's social learning theory, particularly the concept of imitation (observational learning). The discussion of the study findings has been organized to answer the research questions:

4.1 How do children's animated cartoons influence aggressive behavior among children?

Bandura's theory states that learning occurs through observation, imitation, and modeling. Individuals learn behavior by observing others (models) and then imitating that behavior, especially if the observed behavior is rewarded or seen as positive. In this study, animated cartoons serve as models, presenting characters that exhibit aggressive or prosocial behavior. According to Bandura (1977), children easily observe affective expressions that produce emotional arousal, which tends to enhance response tendencies. In observational learning, children typically achieve approximate estimates of new behavior through modeling and refine it through self-adjustment based on reinforcement or punishment from informative feedback. If the cartoons primarily depict characters resolving conflicts peacefully, showing empathy, or facing consequences for aggressive actions, children in the treatment group imitate these non-aggressive behaviors.

In this regard, Bandura also highlighted that the types of behaviors exhibited by different models greatly influence the determination of relevant models to be observed, while less appealing models are ignored. Attention to the model is also channeled by their interpersonal attraction (Bandura, 2009). The significant reduction in both physical and verbal aggression observed in the treatment group supports this interpretation. Children have learned alternative conflict resolution strategies by observing the models in the cartoons. Regarding Bandura's modeling process (1965), after children pay attention, they retain information about the observed behavior in their memory. During exposure, observers primarily acquire symbolic representations of the modeled activities, which serve as guides for appropriate performance (Woolfolk, 2016).

4.2 How do children's animated cartoons influence prosocial behavior among children?

From the study results, the selected animated cartoons depict characters engaged in prosocial actions such as helping and sharing. The significant increase in prosocial helping and sharing observed in the treatment group aligns with this aspect of Bandura's theory. Bandura (1986) emphasized that visual images play a crucial role in observational learning during early periods. The symbolic models mentioned here play a significant role in influencing behavior, especially when characters serve as examples for young viewers. Thus, children have the potential to learn to imitate the behavior of their favorite characters in their daily prosocial actions. Therefore, children have learned the values and positive consequences of prosocial actions by observing the models in the cartoons. This is supported by Slavin (2015), who stated that peer acceptance is a strong predictor for current and long-term adjustment, important for enhancing children's social skills (Carney et al., 2015; Hamm & Zhang, 2010).

The social context depicted in these animated cartoons can significantly impact children's understanding of social norms and moral values. Bandura (2002) emphasized the role of socialization in shaping behavior, highlighting the importance of positive reinforcement for prosocial actions by modeling and praising prosocial skills such as helping and sharing (Austin & Sciarra, 2010) in (Crain, 2014). According to Woolfolk (2016), children internalize rules and moral principles from authoritative figures who have guided them. If children are given reasons, especially those outlining the effects of their actions on others, they can understand why they are reprimanded and are more likely to internalize moral principles. This can be closely related to Bandura's theory (1965), where behavior is more likely to be imitated when reinforced or rewarded, a concept clearly evident in the interactions depicted in the analyzed animated cartoons. By observing desired behavior models, one forms ideas about how response components must be combined and sequenced to produce new behavior.

4.3 To what extent is there a difference in the behavior of children who watch selected animated cartoons compared to those who do not (control group)?

For the third research question, the results show that animated cartoons have a significant effect on pupils' aggressive and prosocial behavior. The cartoons act as social learning tools, influencing children's behavior through observational learning and imitation. The significant differences between the treatment and control groups further support the conclusion that cartoon content plays a crucial role in shaping these behaviors. The importance of social context is relevant in shaping children's behavior because Bandura (1977) emphasized that the motivation to imitate certain behaviors depends on the observed rewards or punishments.

In summary, these findings are highly consistent with Bandura's social learning theory, demonstrating how observational learning and imitation through exposure to animated cartoons can significantly impact pupils' aggressive and prosocial behavior. In this regard, characters in cartoon shows promote prosocial behavior aimed at helping others rather than enhancing personal well-being (D. R. Anderson, 2003; Huston, Watkins, & Kunkel, 1989; Jordan, 2003; Rushton, 1980) in (Ormrod, 2016). Thus, this study emphasizes the potential of media to shape children's behavior, highlighting the importance of creating and selecting media content that models positive and prosocial behavior.

5. CONCLUSION

The findings indicate a significant reduction in aggression and an increase in prosocial behavior in the treatment group exposed to animated cartoons, compared to the control group. In this context, cartoon characters cannot learn much through observation unless they pay attention and accurately understand the key features of the modeled behavior (Crain, 2014). The effectiveness of cartoons, especially selected animated cartoons, shows a positive impact on children's imitation learning. This study successfully demonstrates that selected animated cartoons effectively influence their behavior, reducing aggressive behavior and promoting prosocial behavior. This suggests that carefully designed

animated media can be a valuable tool for teaching positive social skills. Additionally, the findings also support Bandura's social learning theory (1965), which highlights observational learning and imitation in shaping children's behavior. Children learn and imitate the prosocial and non-aggressive behaviors modeled in these cartoons.

This study suggests the potential for using similar animated media as an intervention to address aggressive behavior and promote prosocial behavior among children. This approach can be very useful in educational or therapeutic contexts. However, there are also limitations to this study. If participants are not randomly assigned to groups, the results may be influenced by pre-existing differences between the treatment and control groups. Additionally, the sample size in this study is small. A larger sample size would increase the statistical power of the study and enhance the generalizability of the findings. Therefore, future studies could be conducted using longitudinal designs to assess the long-term effects of animated cartoons on children's behavior. Researchers could also collect qualitative data to gain a deeper understanding of the mechanisms behind the observed behavior changes. By addressing these limitations and exploring the opportunities highlighted above, future research can further refine our understanding of the effects of animated media on children's behavioral development. This knowledge can inform the creation of more effective educational and therapeutic interventions.

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