



The Effect of Drawing Therapy on Gadget Addiction and Emotional Well-Being Among Children Aged 7–8 Years

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ABSTRACT

The increasing use of gadgets among children aged 7–8 years has become a growing concern due to its potential to cause gadget addiction and emotional problems. Children who experience gadget addiction tend to show irritability, difficulty controlling emotions, decreased social interaction, and greater dependence on digital entertainment compared to other activities. Excessive gadget use may also interfere with children's emotional development and social behavior. Drawing therapy is considered one of the non-pharmacological interventions that can help children express emotions creatively while diverting their attention from excessive gadget use. This study aimed to determine the effect of drawing therapy on gadget addiction and emotional conditions among children aged 7–8 years at SDN 2 Bakalan Pule Lamongan. This study employed a quasi-experimental method with a one-group pretest-posttest design. The sample consisted of 44 respondents selected using purposive sampling techniques. Data were collected using the Smartphone Addiction Scale (SAS) questionnaire and a children's emotional questionnaire. Drawing therapy interventions were conducted for 30–45 minutes twice a week over four weeks. Data were analyzed using the Wilcoxon Signed Rank Test. The findings showed a significant decrease in gadget addiction levels after the intervention, with 75% of respondents categorized as having mild gadget addiction, while 55% demonstrated good emotional conditions. The study concludes that drawing therapy has a significant effect on reducing gadget addiction and improving emotional well-being among children aged 7–8 years.

ARTICLE INFO

Article history:

Received
20 April 2026
Revised
25 May 2026
Accepted
10 June 2026

Key Word

Drawing Therapy, Gadget Addiction, Children's Emotions.

How to cite

<https://pusdikra-publishing.com/index.php/jsr>



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INTRODUCTION

The rapid development of digital technology in recent years has significantly transformed people's lifestyles, including those of elementary school children. Gadget use is no longer limited to communication purposes but has expanded into a medium for entertainment, learning, and social interaction among children. Children aged 7–8 years are among the groups most closely connected to digital technology because they grow up in environments highly exposed to electronic media from an early age. This

condition enables children to adapt easily to technological devices; however, it also increases the risk of developing gadget dependency. Uncontrolled gadget use may negatively affect children's social, behavioral, and emotional development (Kristiyuana et al., 2025).

The phenomenon of gadget addiction among elementary school children has become a serious concern in many countries because of its impact on both physical and psychological aspects of child development. Children who use gadgets excessively tend to experience decreased emotional regulation, difficulty concentrating, irritability, and limited social interaction with their surrounding environment. Research conducted by Radesky et al (2023) revealed that prolonged digital device use is associated with increased emotional disturbances and impulsive behavior in children. In addition, a study by Yusup & Wati (2024) explained that elementary school children who use gadgets for more than four hours per day are more likely to experience difficulties in emotional control and interpersonal communication. These findings indicate that excessive gadget use may negatively influence children's emotional development if not properly managed.

Continuous exposure to gadgets causes children to become accustomed to instant stimulation, gradually reducing their ability to regulate emotions and maintain social interactions. Children experiencing gadget addiction generally prefer playing games or watching digital content rather than engaging in creative activities and direct interaction with peers. According to Narita (2025) , excessive gadget use can reduce empathy and increase aggressive behavior tendencies among school-aged children. Meanwhile, Khasanah & Wulandari (2026) stated that inadequate parental supervision regarding gadget use contributes to the emergence of negative emotional behavior in children. The decline in the quality of social interaction ultimately affects children's ability to understand both their own emotions and the emotions of others, resulting in less optimal emotional development.

Various efforts have been implemented to reduce gadget addiction among children, including parental supervision, restrictions on gadget usage time, and the introduction of educational and creative non-digital activities. One non-pharmacological approach considered effective is drawing therapy, as this activity allows children to express emotions through symbols, colors, and visual forms. Drawing activities can help children redirect their attention away from gadgets toward more positive and enjoyable experiences. Research conducted by Farahbakhsh & Karimiafshar (2025) demonstrated that art therapy positively influences emotional regulation and behavioral control in school-aged children. Another study by KYDYROVA & ALIMANOVA (2025) also found that drawing therapy can improve children's self-confidence, concentration, and social interaction within the school environment.

Although numerous studies have examined gadget use and children's emotional development, research specifically analyzing the effect of drawing therapy on gadget addiction and emotional conditions among children aged 7-8 years remains limited. Most previous studies have primarily focused on the negative impacts of gadget use without developing creative interventions tailored to the developmental characteristics of elementary school children. Research by Geng & Liu (2025) mainly emphasized the relationship between smartphone usage intensity and behavioral disorders in children, while Mantika (2026) only discussed the influence of parenting styles on controlling gadget use. Therefore, further research is needed not only to identify the problem of gadget addiction but also to provide applicable interventions suited to children's emotional needs. This research gap forms an important basis for conducting a study on drawing therapy as an effort to reduce gadget addiction while simultaneously improving the emotional well-being of elementary school children.

Based on the explanation above, this study aims to analyze the effect of drawing therapy on gadget addiction and emotional conditions among children aged 7-8 years at SDN 2 Bakalan Pule Lamongan. This research is expected to contribute scientifically to the development of non-pharmacological interventions based on creative therapy in supporting children's emotional health in the digital era. Furthermore, the findings of this study are expected to serve as a reference for parents, teachers, and healthcare professionals in managing children's gadget use more effectively and educationally. Drawing therapy is considered a potential alternative activity that is not only enjoyable for children but also beneficial for improving emotional regulation and social interaction. Therefore, this study holds important value in supporting the optimal growth and development of elementary school children amidst the rapid advancement of digital technology.

RESEARCH METHOD

Research Design and Study Approach

This study employed a quantitative approach using a quasi-experimental design with a one-group pretest-posttest model to examine the effect of drawing therapy on gadget addiction and emotional well-being among children aged 7-8 years. The one-group pretest-posttest design was selected because it allows researchers to compare participants' conditions before and after the intervention within the same group, thereby enabling the measurement of treatment effectiveness more accurately. The study was conducted at SDN 2 Bakalan Pule Lamongan in March 2026. The research focused on elementary school children because this developmental stage is considered highly vulnerable to excessive gadget exposure and emotional instability due to limited self-regulation abilities. According to Karlberg et al (2024), quasi-experimental designs

are widely used in behavioral and educational research when randomization is difficult to implement in natural educational settings.

Population Characteristics and Sampling Technique

The population in this study consisted of all first- and second-grade students at SDN 2 Bakalan Pule Lamongan, totaling 50 children. The sampling technique used was purposive sampling, which is categorized as a non-probability sampling method because participants were selected based on specific inclusion criteria established by the researchers. The final sample included 44 respondents aged 7–8 years who met the predetermined criteria. Inclusion criteria consisted of students enrolled in grades 1 and 2, children in physically and mentally healthy conditions, children capable of participating in drawing therapy activities, and children whose parents or guardians provided informed consent for participation in the study. Exclusion criteria included children with severe developmental disorders, such as severe autism spectrum disorder or severe intellectual disabilities that could hinder participation in therapy activities, children unable to read, and participants who withdrew during the research process. The purposive sampling approach was considered appropriate because it enabled the researchers to obtain participants who matched the objectives and characteristics required in the study (O'Dwyer et al., 2023).

Research Instruments and Data Collection Procedures

Data collection was conducted using structured questionnaires and observational procedures to obtain comprehensive information regarding gadget addiction and children's emotional conditions. The primary instrument used to measure gadget addiction was the Smartphone Addiction Scale (SAS), which has been widely utilized in previous behavioral studies involving digital dependency among children and adolescents. Emotional conditions were assessed using a children's emotional questionnaire adapted to the developmental characteristics of elementary school students. In addition, a standard operating procedure (SOP) for drawing therapy was prepared as a guideline to ensure consistency during intervention implementation. Prior to data collection, the instruments underwent validity and reliability testing to ensure measurement accuracy and consistency. Instrument validity was evaluated using content validity procedures through expert judgment, while reliability testing was conducted using Cronbach's Alpha coefficients to determine internal consistency reliability, as recommended by (Izah et al., 2023).

Intervention Implementation Process

The research procedure was conducted systematically in several stages to ensure methodological rigor and consistency throughout the study. Initially, researchers coordinated with the school administration and obtained permission from relevant authorities and parents or guardians of participants. Subsequently, respondents who met the inclusion criteria were given a pretest using the gadget addiction and emotional

questionnaires to assess baseline conditions before the intervention. The drawing therapy intervention was then implemented for 30–45 minutes twice a week over four weeks. During the intervention sessions, children were encouraged to express feelings, thoughts, and experiences through drawing activities using colors and visual symbols. Following the completion of all intervention sessions, participants were administered a posttest using the same instruments to identify changes in gadget addiction levels and emotional conditions after receiving the treatment.

Statistical Analysis and Data Interpretation

The collected data were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics were used to present respondent characteristics, frequencies, percentages, means, and standard deviations related to gadget addiction and emotional conditions. Inferential statistical analysis was performed using the Wilcoxon Signed Rank Test because the data distribution was not normally distributed and involved paired measurements between pretest and posttest scores. The significance level in this study was established at $p < 0.05$. Data analysis was performed using Statistical Package for the Social Sciences (SPSS) version 26 to facilitate accurate statistical computation and interpretation. According to Galarreta-Aperte et al (2026), the Wilcoxon Signed Rank Test is considered appropriate for analyzing paired non-parametric data in pretest-posttest experimental studies involving relatively small sample sizes.

RESULTS

Respondent Characteristics Based on Grade Level

The distribution of respondents based on grade level at SDN 2 Bakalan Pule is presented in Table 1. The findings indicate that most respondents were first-grade students, accounting for 24 children (54.5%), while second-grade students consisted of 20 children (45.5%). These results demonstrate that the majority of participants involved in this study were children in the early stage of elementary education. Children at this level are generally still developing emotional regulation and self-control abilities, making them more vulnerable to excessive gadget use and emotional instability. The relatively balanced proportion between grade 1 and grade 2 respondents also indicates that the intervention was implemented among participants with comparable developmental characteristics.

Table 1.
Respondent Characteristics Based on Grade Level at SDN 2 Bakalan Pule

Grade Level	n	%
Grade 1	24	54.5

Grade Level	n	%
Grade 2	20	45.5
Total	44	100

The data presented in Table 1 show that first-grade students dominated the respondent distribution with a percentage of 54.5%, whereas second-grade students represented 45.5% of the total sample. This finding suggests that younger school-age children were more actively involved in the study because they met the inclusion criteria established by the researchers. The involvement of respondents from both educational levels also strengthened the consistency of the intervention process because children in these grades share relatively similar cognitive and emotional developmental stages.

Respondent Characteristics Based on Age

The respondent characteristics based on age are presented in Table 2. The findings reveal that the majority of respondents were 7 years old, totaling 24 children (59.1%), while respondents aged 8 years consisted of 20 children (40.9%). These results indicate that most participants belonged to the younger age category within the elementary school developmental phase. At this stage, children are highly influenced by environmental stimulation and digital exposure because emotional maturity and behavioral control are still developing progressively. Therefore, children aged 7-8 years represent an important population for examining the effects of drawing therapy on gadget addiction and emotional well-being.

Table 2.
Respondent Characteristics Based on Age at SDN 2 Bakalan Pule

Age	n	%
7 Years	24	59.1
8 Years	20	40.9
Total	44	100

Based on Table 2, respondents aged 7 years represented the largest proportion of participants, accounting for 59.1% of the total sample. Meanwhile, respondents aged 8 years accounted for 40.9%. These findings indicate that younger children were more dominant in the study population. Children at this age are considered more susceptible to gadget dependency because they tend to seek instant stimulation and entertainment from digital devices. Consequently, interventions aimed at improving emotional

regulation and reducing excessive gadget use are highly relevant for this developmental stage.

Respondent Characteristics Based on Gender

The distribution of respondents based on gender is presented in Table 3. The results show that most respondents were female, consisting of 25 children (56.8%), while male respondents totaled 19 children (43.2%). This distribution indicates that female participants slightly dominated the sample population involved in the study. Gender differences may influence children's emotional expression and behavioral responses toward gadget use because boys and girls often demonstrate different coping patterns during emotional development. Nevertheless, all participants received the same intervention procedures and participated equally throughout the drawing therapy sessions conducted during the study period.

Table 3.
Respondent Characteristics Based on Gender at SDN 2 Bakalan Pule

Gender	n	%
Male	19	43.2
Female	25	56.8
Total	44	100

The findings in Table 3 demonstrate that female respondents represented the majority of participants, accounting for 56.8% of the sample, whereas male respondents accounted for 43.2%. Although the difference between both groups was not substantial, female participants were slightly more dominant in the study. This demographic variation provides broader insight into the implementation of drawing therapy among children with different gender characteristics and emotional expression patterns.

The Effect of Drawing Therapy on Gadget Addiction Levels

The findings regarding the effect of drawing therapy on gadget addiction among children aged 7-8 years are presented in Table 4. Before the intervention was implemented, most respondents were categorized as having severe gadget addiction, consisting of 34 children (77.2%). In addition, 8 children (18.2%) were categorized as having moderate addiction, while only 2 children (4.6%) were categorized as mild. These findings indicate that excessive gadget use was highly prevalent among respondents before the intervention process began. After the implementation of drawing therapy for four weeks, considerable improvements were identified in the respondents' gadget addiction levels.

Table 4.
The Effect of Drawing Therapy on Gadget Addiction
Among Children Aged 7-8 Years

Gadget Addiction Category	Pretest n	Pretest %	Posttest n	Posttest %
Mild	2	4.6%	22	50%
Moderate	8	18.2%	22	50%
Severe	34	77.2%	0	0%
Total	44	100%	44	100%

Table 5.
Mean and Standard Deviation of Gadget Addiction Scores Before and After the
Drawing Therapy Intervention

Statistical Analysis	Pretest	Posttest
Mean	9.61	19.39
Standard Deviation	3.40	3.755

Wilcoxon Signed Rank Test: $p = 0.000$

The data in Table 4 demonstrate a significant reduction in gadget addiction levels following the implementation of drawing therapy. After the intervention, 22 respondents (50%) were categorized as mild and 22 respondents (50%) were categorized as moderate, while no respondents remained in the severe addiction category. The mean score increased from 9.61 during the pretest to 19.39 in the posttest, indicating a positive improvement in respondents' behavioral conditions after receiving the intervention. Furthermore, the Wilcoxon Signed Rank Test produced a significance value of $p = 0.000$, which is lower than the established significance level of 0.05. This result indicates that drawing therapy had a statistically significant effect on reducing gadget addiction among children aged 7-8 years. The intervention successfully redirected children's attention from excessive gadget use toward creative and emotionally expressive activities through drawing sessions.

The Effect of Drawing Therapy on Emotional Well-Being

The findings concerning the effect of drawing therapy on children's emotional conditions are presented in Table 5. Before the intervention, most respondents were categorized as having high emotional problems, consisting of 35 children (79.4%). Meanwhile, 7 respondents (16%) were categorized as moderate and only 2 respondents (4.6%) were categorized as low. These findings indicate that many participants experienced emotional difficulties before receiving the drawing therapy intervention,

including irritability, emotional instability, and limited emotional control associated with excessive gadget exposure.

Table 6.
The Effect of Drawing Therapy on Emotional Well-Being Among Children Aged 7-8 Years

Emotional Category	Pretest n	Pretest %	Posttest n	Posttest %
Low	2	4.6%	24	55%
Moderate	7	16%	20	45%
High	35	79.4%	0	0%
Total	44	100%	44	100%

Table 7.
Mean and Standard Deviation of Emotional Well-Being Scores Before and After the Drawing Therapy Intervention

Statistical Analysis	Pretest	Posttest
Mean	18.11	30.57
Standard Deviation	4.024	3.750

Wilcoxon Signed Rank Test: p = 0.000

Based on Table 5, substantial improvements were observed in respondents' emotional conditions after the intervention was conducted. Following the drawing therapy sessions, 24 respondents (55%) were categorized as having low emotional problems, while 20 respondents (45%) were categorized as moderate, and no respondents remained in the high emotional category. The mean score increased from 18.11 during the pretest to 30.57 in the posttest, reflecting improved emotional regulation and emotional stability among participants after the intervention. The Wilcoxon Signed Rank Test also produced a significance value of $p = 0.000$, indicating that the observed differences between pretest and posttest scores were statistically significant. These findings confirm that drawing therapy contributed positively to improving emotional well-being, helping children express feelings more effectively, regulate emotions more appropriately, and engage in healthier social interactions within their environment.

Discussion

Based on the findings of this study, before the implementation of drawing therapy, most children aged 7-8 years were categorized as experiencing severe gadget

addiction and high emotional problems. Children tended to have difficulty controlling gadget use, spent more time playing games or accessing social media, became easily angry when gadget use was restricted, interacted less with peers, and experienced difficulties regulating emotions. Excessive gadget use causes children to become accustomed to instant entertainment and rapid stimulation, which gradually decreases emotional regulation abilities and social interaction skills. According to Radesky et al (2023), prolonged exposure to digital devices in children is associated with increased emotional dysregulation, impulsive behavior, and reduced social responsiveness. In addition, research conducted by Patil (2023) explained that children with high gadget dependency tend to demonstrate lower emotional stability because they rely heavily on digital stimulation as a source of pleasure and emotional comfort.

The findings of this study also indicate that excessive gadget use negatively affects children's emotional and behavioral development because children become more dependent on virtual entertainment than direct interaction with their social environment. This condition is consistent with the theory of behavioral dependency, which explains that repeated exposure to pleasurable digital stimuli can strengthen repetitive behavioral patterns and reduce self-control abilities over time (Saini & Singh, 2025). Children who continuously receive instant stimulation through gadgets may experience difficulties developing patience, empathy, and emotional maturity. Research conducted by Saputra et al. (2024) found that elementary school children who spend more than four hours per day using gadgets are more likely to demonstrate aggressive behavior, irritability, and low interpersonal communication skills. Similarly, Shafa et al (2025) emphasized that uncontrolled gadget use among children contributes significantly to decreased social sensitivity and emotional balance because children interact less frequently with peers and family members.

After the implementation of drawing therapy, significant changes were observed, in which most respondents shifted into the mild gadget addiction category and low emotional problem category, while no respondents remained in the severe or high categories. These findings indicate that drawing therapy effectively reduced gadget addiction and improved children's emotional conditions. Through drawing activities, children were able to redirect their attention from gadgets toward more creative, enjoyable, and meaningful activities. According to Savytska et al (2022), art therapy allows children to externalize emotions through visual expression, thereby reducing internal emotional tension and improving psychological well-being. In addition, research by An (2025) demonstrated that drawing-based therapeutic activities can increase children's concentration, emotional calmness, and social engagement because creative expression helps children process feelings in a safer and more constructive manner.

The improvement in emotional conditions after the intervention can also be explained through emotional regulation theory, which states that children require adaptive mechanisms to express and manage emotional experiences appropriately. Drawing activities enable children to express emotions such as anger, sadness, fear, and happiness through colors, symbols, and visual imagination, allowing emotional experiences to be released more positively. This finding is in line with research conducted by Galinha et al (2025), which revealed that creative art activities contribute to emotional regulation development and reduce stress symptoms among school-aged children. Meanwhile, Kar et al (2024) reported that children involved in structured drawing therapy demonstrated better emotional expression, increased self-confidence, and healthier peer interaction patterns compared to children who did not receive similar interventions. The similarity between previous studies and the present study lies in the effectiveness of drawing therapy in supporting emotional development, while the difference lies in the specific focus of this study on reducing gadget addiction simultaneously with emotional improvement among children aged 7-8 years.

The statistical analysis using the Wilcoxon Signed Rank Test produced a significance value of $p = 0.000$ ($p < 0.05$), indicating that drawing therapy had a statistically significant effect on reducing gadget addiction and improving emotional conditions among children aged 7-8 years. This finding supports the stimulation substitution concept, which explains that children who receive engaging non-digital stimulation are more capable of reducing dependence on excessive screen exposure. Drawing therapy not only functions as an entertainment activity but also serves as a therapeutic medium that stimulates creativity, emotional awareness, and interpersonal interaction. Research by Gupta (2024) found that non-digital creative interventions significantly decreased problematic screen behavior among children because creative activities encourage cognitive engagement and emotional involvement simultaneously. In Indonesia, Sarria-Martínez et al (2023) also concluded that art-based interventions are effective in improving emotional resilience among elementary school children because artistic expression creates opportunities for healthy emotional communication and stress reduction.

The most interesting aspect of this study lies in its ability to integrate emotional therapy and behavioral intervention simultaneously through a simple non-pharmacological approach that is applicable within elementary school settings. Previous studies generally focused either on the impact of gadget addiction or on emotional interventions separately, whereas this study specifically demonstrated that drawing therapy can address both problems concurrently. This finding provides an important contribution to the development of child mental health interventions in the digital era because gadget dependency and emotional instability are increasingly common among school-aged children. Nevertheless, several external factors may also

influence the effectiveness of the intervention, including parental supervision, peer interaction, school environment, and children's individual personalities. Despite these limitations, the present study confirms that drawing therapy represents an effective, low-cost, safe, and developmentally appropriate intervention for reducing gadget addiction while simultaneously improving emotional well-being among children aged 7-8 years.

CONCLUSION

This study concludes that drawing therapy has a significant effect on reducing gadget addiction and improving the emotional well-being of children aged 7-8 years at SDN 2 Bakalan Pule Lamongan. Prior to the intervention, most respondents were categorized as experiencing severe gadget addiction and high emotional problems, characterized by excessive gadget use, emotional instability, irritability, and limited social interaction. After the implementation of drawing therapy, substantial improvements were observed, as most respondents shifted into the mild gadget addiction category and low emotional problem category. The statistical analysis using the Wilcoxon Signed Rank Test showed a significance value of $p = 0.000$ ($p < 0.05$), confirming that the intervention produced statistically significant changes in both variables. These findings indicate that drawing therapy can serve as an effective non-pharmacological intervention by redirecting children's attention from excessive gadget use toward more creative, expressive, and socially engaging activities. In addition, this study contributes to the development of child behavioral and emotional intervention strategies in the digital era by demonstrating that creative art-based therapy can simultaneously address gadget dependency and emotional regulation problems among elementary school children.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to SDN 2 Bakalan Pule Lamongan for providing permission and support throughout the research process. Appreciation is also extended to all respondents, parents, teachers, and colleagues who contributed to the successful completion of this study. Finally, the authors thank Universitas Gresik for the academic guidance and institutional support provided during the implementation of this research.

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