



## Application of Time-Out Strategies to Reduce Tantrum Behavior in Children With Autism Spectrum Disorder (ASD)

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### ABSTRACT

This study aimed to reduce tantrum behavior in students with Autism Spectrum Disorder (ASD) through the implementation of a structured time-out strategy in a Special School (SLB). The research was motivated by the high frequency, duration, and intensity of tantrums that significantly disrupted the learning process, while existing behavior-management practices were largely reactive and unstructured. Using a Classroom Action Research (CAR) design, the study was conducted in three cycles consisting of planning, action, observation, and reflection. The participants were two students with ASD who frequently exhibited tantrum behavior. Data were collected through structured observations, interviews with teachers and parents, and documentation, and were analyzed using qualitative and quantitative approaches with triangulation to ensure data credibility. The findings showed a consistent reduction in tantrum frequency, duration, and intensity across the three cycles. By the final cycle, tantrum intensity decreased from moderate-severe to mild. The study concludes that the time-out strategy is an effective and practical intervention for managing tantrum behavior in students with ASD in special school settings.

## 1. Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by persistent impairments in social communication and social interaction, as well as restricted and repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2022). This condition is spectrum in nature, meaning individuals with ASD demonstrate varying levels of severity and need for support. These variations in characteristics demand an educational approach that is specific, flexible, and based on individual needs, especially in managing behavior that

emerges during the learning process. Globally, the prevalence of ASD shows a significant increase. The World Health Organization (2021) reports that around 1 in 160 children in the world are on the autism spectrum, with the number trending to continue to increase as diagnostic methods develop and public awareness increases. This data confirms that ASD is no longer a marginal issue, but a global challenge that requires serious attention in various sectors, including education.

In Indonesia, ASD prevalence data is still limited, but the report from the Ministry of Health of the Republic of Indonesia (2022) shows that there is an increase in the number of ASD diagnoses every year. This condition has a direct impact on the increasing need for special education services, especially in Special Schools (SLB). Schools as formal learning environments have a strategic role in supporting the academic, social and emotional development of students with ASD. In educational contexts, children with ASD often face complex challenges, particularly in emotional regulation, behavioral flexibility, and communication skills. These obstacles often give rise to maladaptive behavior that can disrupt the learning process. One of the behaviors that most often arises and is a challenge for teachers is tantrums, namely emotional outbursts characterized by crying, screaming, or aggressive behavior (Smith & Segal, 2020).

Tantrums in children with ASD are often triggered by an inability to express needs verbally, changes in routine, or sensory overload. The Centers for Disease Control and Prevention (CDC, 2022) reports that approximately 30–50% of children with ASD exhibit repeated tantrum behavior in academic and social situations. This behavior not only impacts the child themselves, but also affects the dynamics of the class as a whole. If not handled appropriately, tantrum behavior can hinder the achievement of learning goals, reduce the quality of social interactions, and increase stress on teachers and other students. Smith and Iadarola (2015) emphasized that disruptive behavior that is not managed systematically can have a negative impact on children's academic and emotional development in the long term.

Previous studies have shown that the use of Augmented Reality (AR) in education can improve students' conceptual understanding, motivation, and learning outcomes. Khusnunnisa and Andriani (2025) reported that AR-assisted interactive multimedia on the topic of the auditory system increased students' engagement and helped them visualize complex concepts that are difficult to understand through conventional learning methods. Similarly, Septiani et al. (2025) found that AR-integrated learning media on the development of atomic theory was practical and effective in improving senior high school students' learning outcomes. Zahro et al. (2024) also developed an AR-based Big Book that enhanced elementary students' understanding of plant structure and function through more concrete and interactive visualization.

Furthermore, AR technology has been proven to increase students' interest and learning skills across various subjects. Jannah et al. (2025) found that AR-based storybooks significantly improved students' reading interest by providing a more immersive learning experience. Muti'ah et al. (2024) reported that an AR-based pop-up book effectively improved students' numeracy skills, while Masrukhin et

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al. (2024) demonstrated that AR-based learning comics enhanced students' visual communication abilities through contextual and interactive material presentation. In addition, several development studies highlight the ability of AR to help students understand abstract concepts. Syahrir et al. (2025) explained that AR-based learning modules can visualize abstract concepts in science learning, making them easier for students to comprehend. Sudarno et al. (2025) also found that AR integrated with inquiry learning improved students' understanding of light and its properties.

Moreover, Oktama et al. (2026) reported that AR-based interactive media in mathematics learning significantly improved elementary students' learning outcomes. Based on these findings, Augmented Reality has great potential as an innovative learning medium because it integrates virtual objects with the real environment, creating a more interactive, contextual, and engaging learning experience. Therefore, the development of AR-based learning media is considered a relevant strategy to enhance the effectiveness of the learning process and support students in understanding abstract concepts.

In many special schools, handling tantrum behavior is still reactive, such as giving verbal warnings, temporarily stopping learning activities, or calming children without structured procedures. This kind of approach often only relieves behavior temporarily and does not get to the root of the problem. This condition shows the need for behavior management strategies that are systematic, theory-based, and easy for teachers to implement in the classroom.

## **2. Methodology**

This study employed a Classroom Action Research (CAR) approach to reduce tantrum behavior in a student with Autism Spectrum Disorder (ASD) through the implementation of a time-out strategy. CAR was selected because it enables teachers and researchers to improve classroom practices and behavioral interventions in a reflective and cyclical manner within real classroom settings. The research followed the model proposed by Kemmis and McTaggart, which consists of four stages: planning, action, observation, and reflection.

The study was conducted at a private Special School (SLB) in Bandung City that provides educational services for students with various special needs, including ASD. The school environment supports behavioral intervention because it offers structured learning settings and a calm area with minimal distractions that can function as a time-out space. The research was carried out for three months (January–March 2025), including preparation, implementation of action cycles, and evaluation of the intervention. The participant was one elementary-age student diagnosed with Autism Spectrum Disorder who frequently displayed tantrum behavior during classroom learning. The participant was selected using purposive sampling based on the following criteria: (1) formally diagnosed with ASD by professional staff, (2) showing repetitive tantrum behavior in class, and (3) obtaining parental consent. Based on teacher records, the student exhibited tantrums

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three to five times per day, particularly when facing demanding tasks or unexpected situations.

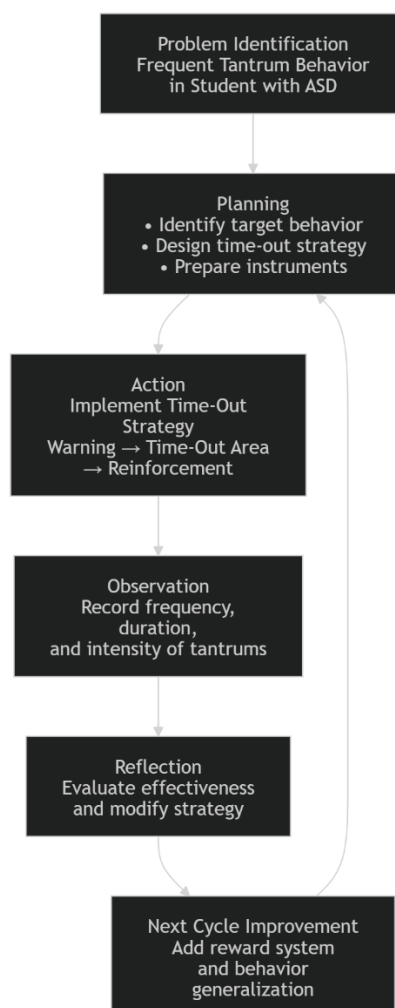


Figure 1. Classroom Action Research Cycle Using Time-Out Strategy

The intervention was implemented through several CAR cycles. During the planning stage, researchers and teachers identified the target behavior (tantrums) and designed the time-out procedure adapted to the student's characteristics. Indicators of success were defined based on reductions in frequency, duration, and intensity of tantrum behavior. Observation sheets, interview guidelines, and documentation formats were also prepared. During the action stage, the teacher implemented the time-out strategy during classroom activities. When early signs of tantrum behavior appeared, the teacher provided a short verbal warning. If the behavior continued, the student was directed to the time-out area for three to five minutes. After the student calmed down, they were allowed to return to learning activities and received positive reinforcement in the form of praise. In the following cycle, a reward system was added to strengthen adaptive behavior, while the final cycle focused on generalizing appropriate behavior inside and outside the classroom.

The observation stage was conducted systematically in each cycle to record changes in tantrum behavior, including its frequency, duration, and intensity. Tantrum behavior was defined as excessive emotional responses expressed verbally or nonverbally that disrupt the learning process. Behavioral intensity was categorized into mild, moderate, and severe levels. Observations were documented using structured observation sheets supported by field notes and visual documentation. The reflection stage involved analyzing observation results and discussing them with the teacher to evaluate the effectiveness of the intervention. Reflection helped identify successful strategies, challenges, and necessary improvements for the next cycle.

Data were collected through direct observation, structured interviews, and documentation. Observation provided quantitative and descriptive data on tantrum behavior, while interviews with teachers and parents explored their perceptions of behavioral changes and the effectiveness of the time-out strategy. Documentation served as supporting evidence for the findings. Data analysis combined quantitative and qualitative approaches. Quantitative data were analyzed descriptively by comparing tantrum frequency, duration, and intensity across cycles. Qualitative data from interviews were analyzed thematically to identify patterns in participants' perceptions. To ensure validity, method triangulation was applied by comparing observation, interview, and documentation data.

The intervention was considered successful if the results showed:

1. A minimum 50% reduction in tantrum frequency,
2. A significant decrease in tantrum duration,
3. A reduction in behavioral intensity from moderate/severe to mild, and
4. Positive perceptions from teachers and parents regarding behavioral improvement and classroom climate.

***Interview Instrument***

To obtain deeper information about the implementation of the time-out strategy and its impact on students' tantrum behavior, structured interviews were conducted with the classroom teacher and the students' parents. The interviews aimed to explore perceptions regarding the causes of tantrum behavior, previous strategies used to manage the behavior, and behavioral changes observed during the intervention. The interview questions were designed based on the indicators of tantrum behavior, namely frequency, duration, and intensity, as well as the effectiveness of the time-out strategy implemented during the classroom action research cycles.

Table 1. Interview Questions for Teachers and Parents

No	Interview Questions
1	How often does the student show tantrum behavior during classroom learning activities?
2	What situations or conditions usually trigger tantrum behavior in the student?
3	How does the student usually respond when experiencing frustration or difficulties during learning?

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No	Interview Questions
4	What strategies have previously been used by teachers to manage the student's tantrum behavior?
5	How effective were those previous strategies in reducing tantrum behavior?
6	How do you perceive the implementation of the time-out strategy in the classroom?
7	Have you observed any behavioral changes after the implementation of the time-out strategy?
8	How does the student usually react when directed to the time-out area?
9	What factors support the effectiveness of the time-out strategy in reducing tantrum behavior?
10	What challenges or difficulties were encountered during the implementation of the strategy?
11	How does the implementation of the strategy influence the classroom learning atmosphere?
12	Do you think the time-out strategy should continue to be implemented in the future? Why?

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The interview questions presented in Table 1 were used to collect qualitative data regarding the effectiveness of the time-out strategy and the behavioral changes experienced by the students during the intervention process. The results of the interviews were then analyzed descriptively to identify patterns of teacher and parent perceptions related to the implementation of the strategy and its impact on reducing tantrum behavior. These qualitative findings were used to complement the observation data, thereby providing a more comprehensive understanding of the effectiveness of the intervention.

### 3. Results and Discussion

#### *Result*

The results of this classroom action research show a change in tantrum behavior in students with Autism Spectrum Disorder (ASD) after observing and implementing actions in stages over several cycles. These changes are clearly visible in the aspects of frequency, duration and intensity of tantrums that appear during learning activities at Special Schools (SLB) in Bandung City. These findings were obtained through systematic observations of research subjects during the regular learning process, thus describing the conditions of students' behavior in real classroom situations.

The research subject coded S.K-1 with the initials B.S.P.P is a male student aged 18 years 4 months who is in class XII SMALB and has been diagnosed with Autism Spectrum Disorder (ASD). Based on the results of initial observations, the subject showed a tendency for tantrum behavior in various situations, especially when the classroom atmosphere was not conducive, when there were peers who also showed tantrum behavior, when learning was monotonous for a long duration, as well as during certain routine activities such as Duha prayers or when dealing with the loss of objects. Academically, the subject is classified as capable of participating in learning, but has a low level of tolerance for boredom, which often triggers emotional responses in the form of tantrums. From the social-emotional aspect, the subject still experiences difficulty in controlling emotions when facing situations that do not match his expectations.

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In the early stages of the research, namely before implementing the time-out strategy, the subject's tantrum behavior was relatively high. Tantrums are shown in the form of crying loudly, screaming, refusing the teacher's instructions, hitting the table, and even dropping the body to the floor. This behavior not only disrupts the subject's learning process, but also has an impact on the overall classroom situation. The duration of the tantrum is relatively long and requires direct intervention from the teacher to calm the subject. The intensity of behavior in the initial conditions is in the moderate to severe category, because the emotional response that appears is quite strong and difficult to divert in a short time.

Observations in the initial cycle were carried out in two meetings without giving special treatment, with the aim of obtaining accurate baseline data regarding the characteristics of the subject's tantrum behavior. Observation results showed that at the first meeting, tantrums appeared when the subject was late for class, lost his stationery, and was exposed to uncondusive behavior from peers. The tantrum behavior lasted for 12 minutes with a frequency of three occurrences and varying intensity from moderate to severe. At the second meeting, tantrums arose when the subject refused to participate in Duha prayer activities and was influenced by the tantrum behavior of his peers. In this condition, the duration of the tantrum was recorded as 8 minutes with a frequency of two occurrences and the intensity was in the moderate category. In detail, the results of observations in the initial cycle can be seen in Table 2 below.

Table 2. Event Indicators

Meeting	Time Tantrum Occurs	Duration (Minutes)	Frequency (Number of Events)	Intensity of the tantrum	Note
1	a. Late for class b. Something is missing (pencil) c. There are colleagues who are not conducive	12	3	2,2,3	hen students have a tantrum, the teacher tries to give simple instructions and is given space to tell stories
2	Refuses duha prayers and friends have tantrums	8	2	2,2	Crying includes screaming, and gets affected when friends have tantrums by pushing friends and shouting.

Based on the data in the table 2, it can be seen that the subject's tantrum behavior does not appear randomly, but is closely related to certain trigger factors, such as

changes in routine, loss of objects, and the influence of peer behavior. The relatively high frequency of tantrums and their long duration indicate that the subject experiences difficulty in regulating emotions when facing environmental stress. The intensity of the tantrum which is in the moderate to severe category indicates that this behavior has a significant impact on the continuity of learning. The findings at this initial stage become an important basis for designing actions in the next cycle. Baseline data shows that without structured intervention, tantrum behavior tends to appear repeatedly and is difficult to control consistently. Therefore, the results of these initial observations emphasize the need to implement systematic and sustainable behavior management strategies to help subjects develop more adaptive emotional regulation abilities in the context of classroom learning.

The research results in cycle I were obtained through systematic observation of students' tantrum behavior during two meetings. The analysis focused on three main indicators of behavior, namely duration, frequency and intensity of tantrums. The average tantrum duration is calculated by dividing the total tantrum duration by the number of encounters. At the first meeting, the duration of the tantrum was recorded as 12 minutes, while at the second meeting it decreased to 8 minutes, so that the average duration of tantrums in cycle I was 10 minutes per meeting. This calculation shows that although there is a decrease in the duration of the tantrum from the first meeting to the second meeting, the tantrum behavior still lasts quite a long time and has the potential to disrupt the learning process.

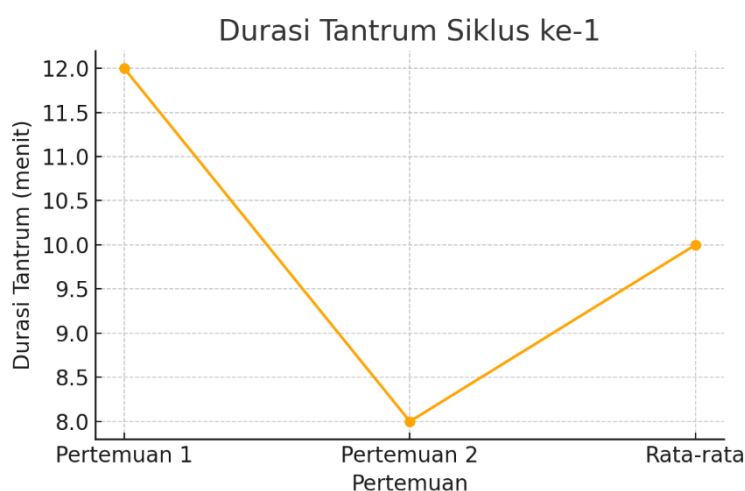


Figure 2. Duration of the 1st Sicwide Tantrum

Visually, changes in tantrum duration in cycle I are presented in Figure 2, which shows a decrease in duration from 12 minutes to 8 minutes. The graph shows a tendency to decrease the duration of tantrums, but this decrease cannot be directly linked to the effectiveness of the time-out strategy, because in cycle I students were still at the stage of introduction and adaptation to the intervention procedure. At the initial meeting, students still showed resistance and confusion towards the teacher's directions, while at the next meeting they began to see initial adjustments to the behavioral consequences given.

Apart from duration, tantrum frequency was also analyzed by counting the number of tantrum incidents at each meeting. At the first meeting, the frequency of tantrums was recorded at three times, while at the second meeting it decreased to two incidents. Thus, the average frequency of tantrums in cycle I was 2.5 times per meeting. This data shows that tantrum behavior still occurs relatively frequently, although there is a slight decrease in frequency from meeting to meeting.

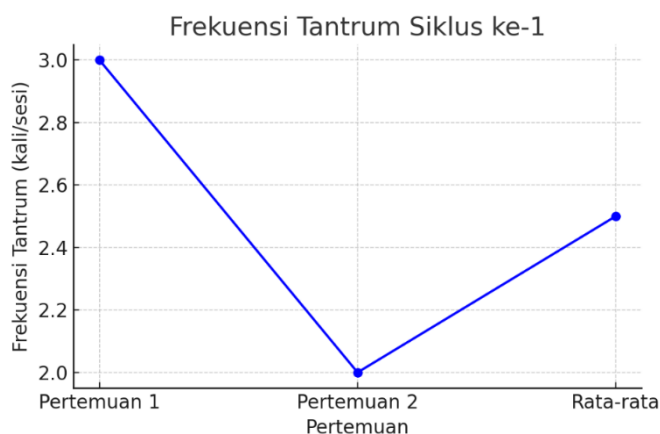


Figure 3. 1st Cycle Tantrum Frequency

The pattern of changes in tantrum frequency is shown in Figure 3, which shows a decrease from three incidents to two incidents. However, the frequency of tantrums which is still relatively high reflects that students do not fully understand the relationship between tantrum behavior and the consequences they receive. At this early stage, the teacher is still focused on introducing time-out procedures and getting used to class rules, so that the changes in behavior that occur are initial and not yet stable.

Aspects of tantrum intensity were analyzed using a three-level scale, namely mild (1), moderate (2), and severe (3). At the first meeting, the tantrum intensity was recorded with scores of 2, 2, and 3, while at the second meeting the intensity scores were recorded at 2 and 2. The total tantrum intensity score was 11 with a total of five incidents, so the average intensity of tantrums in cycle I was 2.2. This score shows that the intensity of the tantrum is in the moderate to severe category, which indicates that the student's emotional response is still quite strong and requires direct intervention from the teacher.

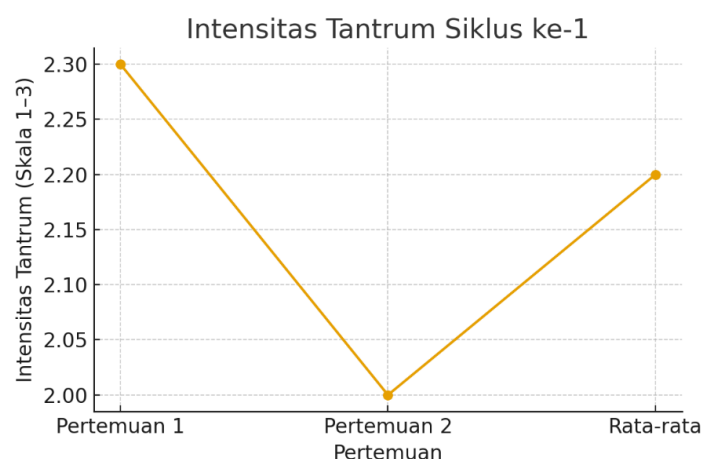


Figure 4. 1st Cycle Tantrum Intensity

The change in tantrum intensity is visualized in Figure 4, which shows a trend of decreasing intensity from the first meeting to the second meeting. Qualitatively, at the beginning of the cycle students still displayed the behavior of crying loudly, shouting, and refusing teacher instructions. At the next meeting, although tantrum behavior still appears, the form of response begins to shift to something lighter, such as crying briefly or withdrawing without excessive aggressive behavior. These changes indicate an initial adjustment process to the behavior management strategies introduced.

Based on the results of these quantitative and qualitative observations, it can be concluded that in cycle I the students' tantrum behavior was still at a level that was quite disruptive to the learning process. The average duration of tantrums is 10 minutes per incident, the frequency of tantrums is 2.5 times per meeting, and the intensity is in the moderate to severe category, indicating that the strategies implemented at this stage have not had a significant impact in suppressing tantrum behavior. However, the decreasing trend in these three indicators indicates that students are starting to enter the adaptation phase to intervention procedures, so that the results in cycle I can be used as a starting point for improving and strengthening the time-out strategy in the next cycle.

Based on the tantrum behavior observation sheet which uses light (1), moderate (2), and heavy (3) intensity categories, the results of observations in cycle II showed positive changes compared to the previous cycle. The subject's tantrum behavior still appears, but with more controlled duration, frequency and intensity. Tantrum duration is measured by calculating the total tantrum time that occurs in each meeting, then averaging it. At the first meeting, the duration of the tantrum was recorded as 8 minutes, while at the second meeting it decreased to 5 minutes. Based on these calculations, the average tantrum duration is 6.5 minutes per meeting. This decrease is depicted visually in Figure 4 Tantrum Duration for Subject 2 Cycle II, which shows the tendency of decreasing tantrum time from one meeting to the next.

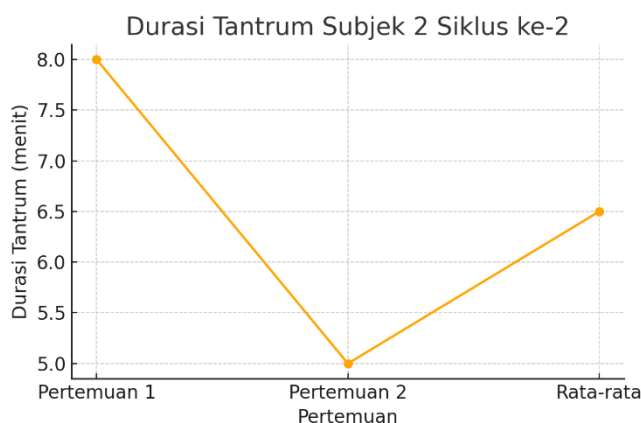


Figure 5. Duration of Subject 2's 2nd Cycle Tantrum

This decrease in tantrum duration indicates that the subject began to be able to calm down more quickly after being directed to the time-out area. Children appear to better understand the consequences of tantrum behavior and begin to show better emotional regulation skills. This condition is in line with the opinion of Miltenberger (2016) who states that reducing the duration of maladaptive behavior is an early indicator of successful behavior modification through learning the relationship between behavior and consequences. Cooper, Heron, and Heward (2020) also emphasized that consistency in implementing time-out plays an important role in helping children develop self-control gradually.

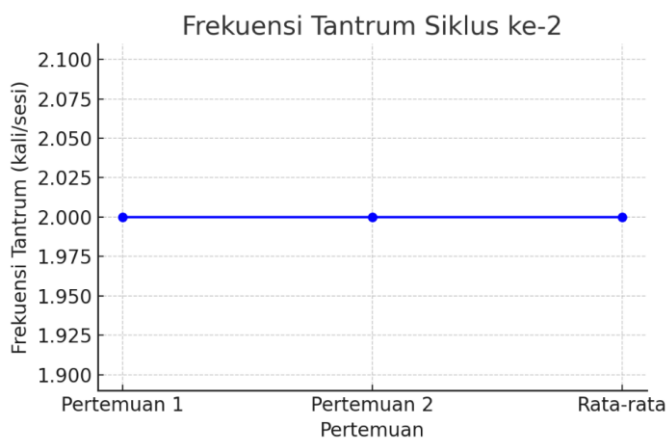


Figure 6. 2nd Cycle Tantrum Frequency

In terms of frequency, the calculation results show that the number of tantrum incidents in cycle II is at a relatively stable number. At the first and second meetings, the frequency of each tantrum was recorded twice, so that an average frequency of two tantrums per meeting was obtained. This pattern is shown in Figure 5 Frequency of Tantrums in Cycle II, which shows that there is no increase in the number of tantrum incidents. Although the reduction in frequency has not been seen significantly, this stability shows that tantrum behavior is no longer escalating as it did in the early stages of intervention.

The stable frequency of tantrums in cycle II can be understood as the subject's adaptation process to the time-out strategy implemented. The child begins to accept the procedure of temporary separation from classroom activities as a behavioral consequence, so that excessive rejection responses decrease. Alberto and Troutman (2013) stated that in the middle stages of behavioral intervention, frequency stabilization is a sign that individuals are starting to understand the pattern of reinforcement and consequences applied. Thus, although frequency has not decreased drastically, changes in aspects of duration and intensity show significant progress.

Tantrum intensity is measured by adding up the intensity score for each tantrum incident and then dividing it by the total frequency of incidents. At the first meeting, the tantrum intensity was recorded at scores 2 and 2, while at the second meeting it was at scores 2 and 3. From the overall score, an average intensity of 2.25 was obtained, which was included in the moderate category. These results are shown in Figure 6 Tantrum Intensity in Cycle II, which shows that although it is still in the moderate category, tantrum intensity tends to be more controlled than in cycle I.

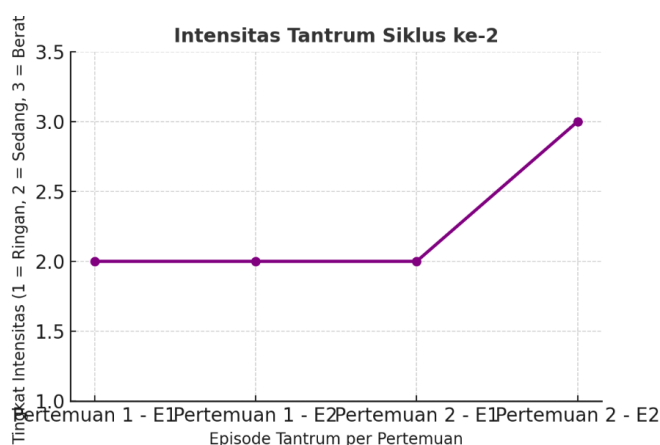


Figure 7. 2nd Cycle Tantrum Intensity

Qualitatively, the subject began to show changes in the form of tantrum behavior. Emotional reactions previously characterized by loud crying, screaming, and high-intensity rejection of instructions begin to shift to cries that are shorter and more easily subdued. After being directed to the time-out room, the subject seemed to calm down more quickly and was able to return to learning with minimal assistance. This finding is in line with the view of Miltenberger (2016) which states that a decrease in the intensity of maladaptive behavior reflects the development of emotional regulation abilities in individuals. Overall, the results of observations in cycle II showed that the subject's tantrum behavior began to experience a fairly clear decline, especially in terms of duration and intensity, as well as stability in terms of frequency. Compared to cycle I, tantrums in cycle II were shorter, more controlled, and no longer showed behavioral escalation. These findings indicate that the time-out strategy implemented is starting to have a positive impact, although improvements are still needed in the next cycle to achieve more optimal and sustainable behavior control.

The results of implementing actions in cycle III showed very significant development compared to cycle I and cycle II. Improving the setting of the time-out room, which is made completely clear, with minimal distractions, and far from noise, has had a positive impact on controlling the subject's tantrum behavior. During two meetings, tantrum behavior only appeared in mild form and could be calmed down in a short time after the subject was directed to the time-out room. Children no longer show aggressive behavior such as shouting loudly, slamming things, or extreme resistance to instructions, as seen in previous cycles.

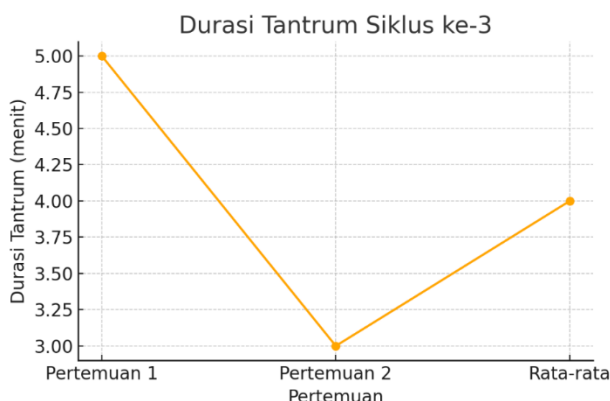


Figure 8. Duration of Tantrum Cycle 3

Based on observations, the duration of the tantrum at the first meeting was recorded as 5 minutes and decreased to 3 minutes at the second meeting. Average calculations show that the duration of tantrums in cycle III reached 4 minutes per meeting. This decrease in duration is clearly illustrated in Figure 8 Duration of Tantrums in Cycle III, which shows that the tantrum time is getting shorter and no longer disrupts the course of learning activities. Children appear to calm themselves more quickly when in the time-out room, and are able to return to learning without showing significant resistance. This indicates that the child understands the relationship between tantrum behavior and the consequences applied through the time-out strategy.

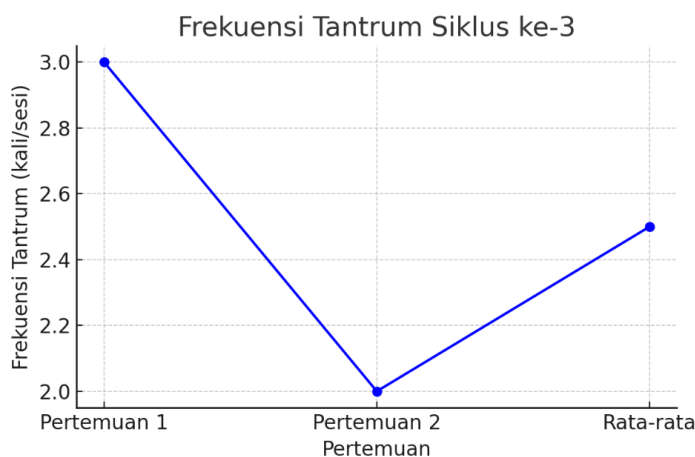


Figure 8. 3rd Cycle Tantrum Frequency

In terms of frequency, observation results show that the number of tantrum incidents has also decreased significantly. At the first meeting, tantrums appeared three times, while at the second meeting they only appeared twice. The average frequency of tantrums in cycle III was 2.5 times per meeting. This decreasing trend is shown in Figure 8 Tantrum Frequency in Cycle III, which shows that the frequency of tantrums is becoming more controlled compared to the previous cycle. This decrease in frequency indicates that the child is starting to be able to manage his emotional responses more adaptively and is no longer expressing discomfort through repeated tantrum behavior.

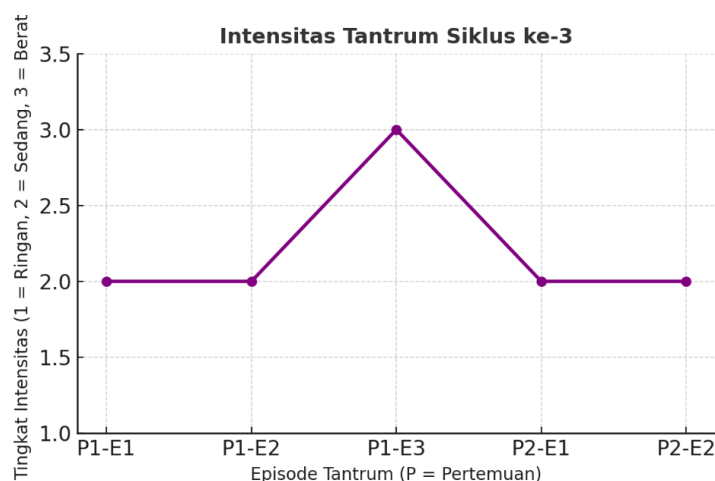


Figure 9. 3rd Cycle Tantrum Intensity

Tantrum intensity measurements showed the most prominent changes in cycle III. Based on the results of calculating the tantrum intensity score from all incidents, an average intensity of 1.25 was obtained, which is included in the mild category. These results are visualized in Figure 9 Tantrum Intensity of Cycle III, which shows a consistent decrease in intensity compared to cycles I and II. The form of tantrum behavior that appears in this cycle is only in the form of light whining and soft crying, and is easily diverted after the subject is in the time-out room. Children no longer show uncontrolled behavior, so the learning process can take place in a more conducive manner.

Qualitatively, changes in the subject's behavior are very clear. Children appear calmer in dealing with classroom situations that previously triggered tantrums, such as crowded conditions or interactions with other students. The time-out procedure can be carried out without resistance, and the child begins to show behavioral awareness, namely understanding that tantrum behavior will be followed by temporary separation from the main activity. This condition indicates the development of emotional regulation and self-control abilities in the subject. The findings in cycle III are in line with the opinion of Miltenberger (2016) who stated that reducing the duration, frequency and intensity of maladaptive behavior is an indicator of successful behavior modification. In addition, Kazdin (2013) emphasized that the effectiveness of the time-out strategy is greatly influenced by environmental conditions that are free from distractions, so that individuals can

calm themselves more quickly without any stimuli that reinforce problem behavior. The results of cycle III proved that improving the time-out room settings made a major contribution to the success of the intervention.

Thus, the results of cycle III show that the time-out strategy has reached an optimal level of effectiveness. The subject's tantrum behavior decreased significantly in terms of duration, frequency and intensity, and no longer interfered with the learning process. The child has entered the behavioral stabilization phase, where emotional regulation abilities and compliance with classroom rules develop consistently. Based on these achievements, cycle III was designated as the final cycle because the research objective had been achieved, namely reducing tantrum behavior significantly through implementing appropriate and consistent time-out strategies.

Based on the results of observations on subject 1 (B.S.P.P) from the pre-cycle stage to cycle III, there was a consistent decrease in tantrum behavior after implementing the time-out strategy. In the pre-cycle stage, tantrum behavior still occurs with an average frequency of three times per meeting, an average duration of 12 minutes, and an intensity of 2.4 which is in the moderate to severe category, thus greatly hindering the subject's involvement in the learning process. In cycle I, even though no special intervention had been given, there was a slight decrease with an average frequency of 2.5 times, duration of 10 minutes, and intensity of 2.2, which was still in the moderate to severe category. The implementation of the time-out strategy in cycle II began to show clearer results, marked by a decrease in average duration to 7.5 minutes, frequency of two times per meeting, and intensity of 1.8 (light-moderate). The peak of success was achieved in cycle III after improving the time-out room setting which really had minimal distractions, with an average duration of 4 minutes, a stable frequency of twice, and the intensity decreased sharply to 1.24 which was included in the light category. This decreasing trend shows that the time-out strategy is effective in suppressing the tantrum behavior of subject 1, so that cycle III is designated as the final cycle because the indicator of success has been achieved.

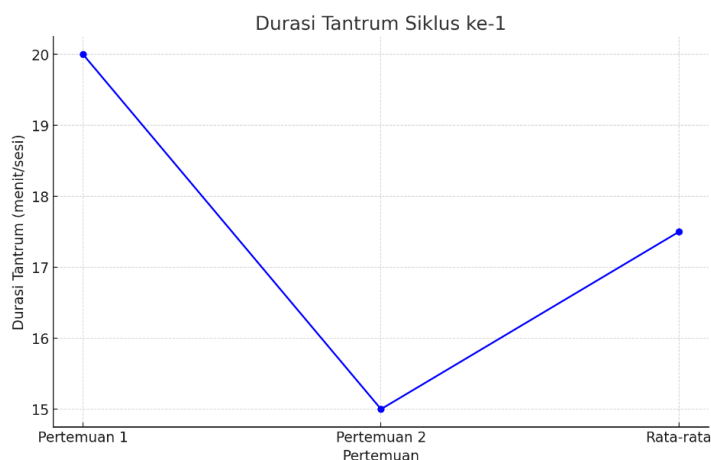


Figure 10. Duration of Tantrum Cycle 1

To obtain a more comprehensive picture, the research was continued with the 2nd subject (R.A) who had more severe tantrum behavior characteristics. Based on the results of observations in cycle I, subject 2's tantrum behavior still appeared dominantly without any special intervention. At the first meeting, the tantrum occurred after the break when the new pattern was implemented, with a total duration of 20 minutes, a frequency of two occurrences, and an intensity of 3, 3, and 2 which indicated the severe category. At the second meeting, tantrums appeared when the class atmosphere started to become noisy and students experienced boredom, with a duration of 15 minutes, a frequency of three occurrences, and an intensity of 3 and 2. The average calculation shows that the duration of the first cycle of tantrums was 17.5 minutes, as shown in Figure 10 Duration of Cycle I Tantrums, which illustrates the decrease in duration from the first meeting to the second meeting, although it is still relatively long.

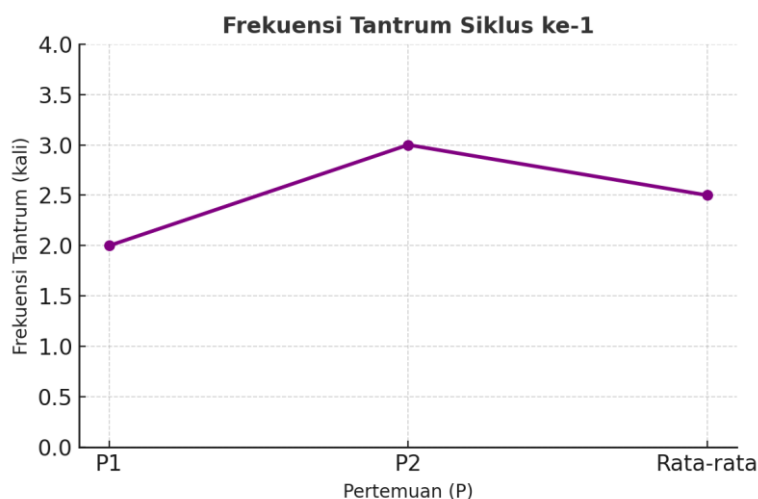


Figure 11. 1st Cycle Tantrum Frequency

In terms of frequency, the average occurrence of tantrums in cycle I reached 2.5 times per meeting, which is visualized in Figure 11 Frequency of Tantrums in Cycle I, indicating that tantrum behavior still occurs frequently and has great potential to disrupt the learning process. Meanwhile, the intensity measurement shows an average score of 2.2, which is in the moderate to severe category. This intensity pattern is depicted in Figure 12 Tantrum Intensity Cycle I, which shows fluctuations in tantrum intensity with a tendency to be heavy at the first meeting and slightly more stable conditions at the second meeting.

Overall, the results of observations in cycle I of subject 2 showed that tantrum behavior continued for quite a long time, appeared with high frequency, and was accompanied by an intensity approaching the severe category, such as crying loudly, shouting, refusing instructions, throwing things, and even hurting oneself. This condition confirms that subject 2 has a more complex level of emotional regulation difficulty than subject 1. Therefore, cycle I functions as an initial mapping of the real conditions of subject 2's tantrum behavior before implementing the time-out strategy in the next cycle. By finding a consistent and severe pattern

of tantrums in cycle I, a more structured intervention is needed in cycle II to reduce the duration, frequency and intensity of tantrums so that the learning process can be more conducive.

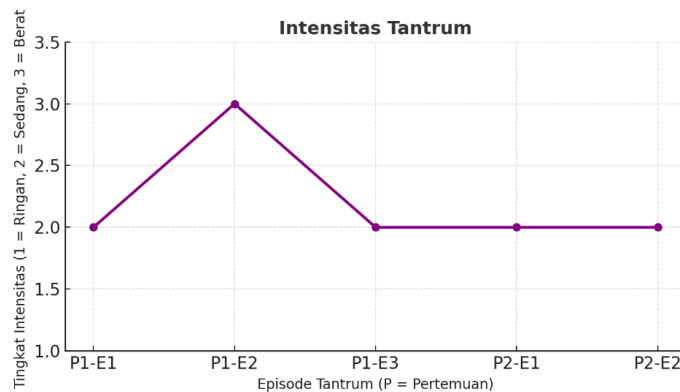


Figure 12. Tantrum Intensity

The results of the research on subject 2 (R.A) showed a gradual change in tantrum behavior after implementing the time-out strategy starting from cycle II to cycle III. Based on reflections from cycle I, tantrum behavior still occurs with quite high frequency, long duration, and intensity is in the moderate to severe category. Therefore, in cycle II, intervention began to be implemented in the form of a time-out strategy using a special room that was relatively quiet, even though there was still standard equipment such as tables and chairs. During the two meetings in cycle II, tantrums still appeared, but began to show differences compared to the previous cycle. At the first meeting, tantrums occurred twice with a total duration of 15 minutes, with moderate to severe intensity, while at the second meeting the tantrums occurred three times with the same total duration. Although the frequency has not decreased consistently, the form of tantrum behavior has begun to change, characterized by a reduction in self-harm behavior and an increase in the subject's ability to return to calm after being directed to the time-out room.

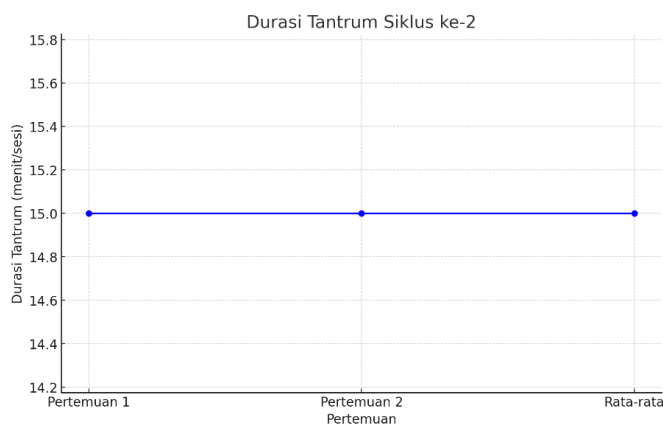


Figure 13. Duration of Tantrum Cycle 2

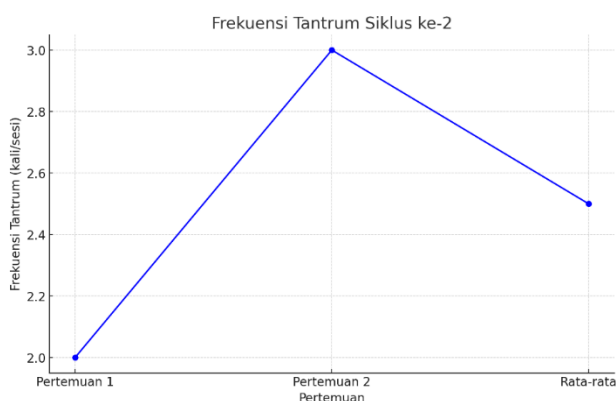


Figure 14. 2nd Cycle Tantrum Frequency

This is reinforced by Figure 13 which shows that the duration of tantrums in cycle II is relatively stable at each meeting, with an average of 15 minutes. The graph indicates that the decrease in duration has not occurred significantly and the subject is still at the adaptation stage to the intervention being implemented. Meanwhile, Figure 14 shows that the frequency of tantrums fluctuates slightly between two and three times per meeting, with an average of 2.5 times, which indicates that the frequency of tantrum behavior is not yet completely under control. Figure 15 shows that the intensity of tantrums is still in the moderate to severe category, although it no longer shows extreme spikes like in cycle I. Overall, the results in cycle II show initial progress, especially in changes in the form of behavior and the subject's response to teacher directions, but the effectiveness of the time-out strategy is not yet optimal because the room setting still contains distractions.

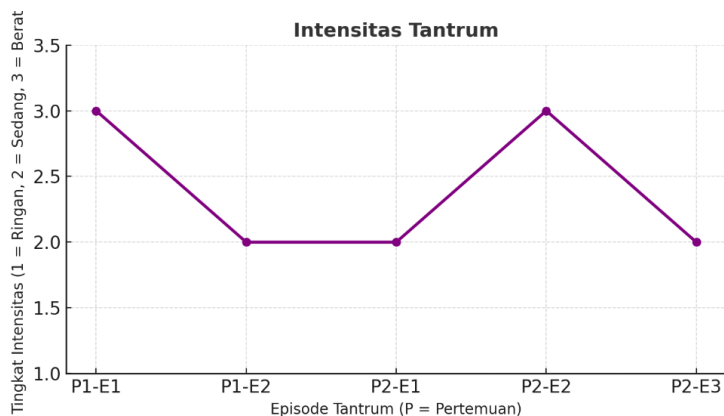


Figure 15. Tantrum Intensity

Entering cycle III, significant improvements were made to the time-out room settings by choosing a room that was completely clear, far from noise, and free from stimuli that had the potential to become distractions. The results of observations in this cycle show a clearer and more consistent reduction in tantrum behavior. At the first meeting, tantrums appeared twice with a total duration of 10 minutes and the intensity was in the moderate category, without being accompanied by aggressive

behavior or self-harm. In the second meeting, the frequency remained twice, but the duration decreased to 8 minutes, with a more controlled intensity. This change shows that the subject calmed down more quickly after being directed to the time-out room and was able to respond more adaptively to the teacher's instructions.

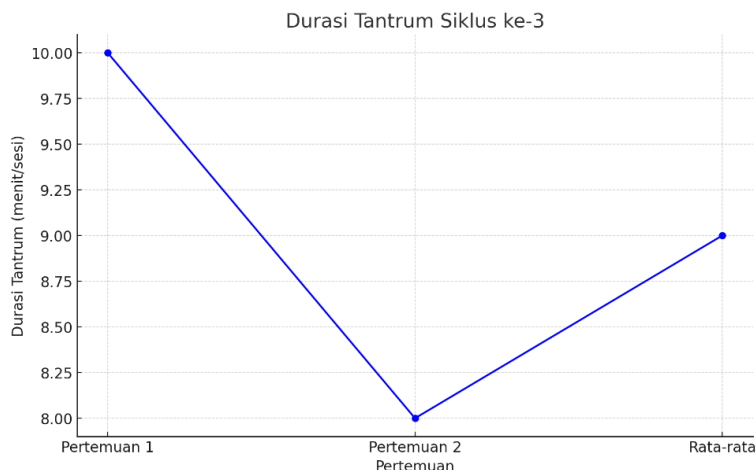


Figure 16. Duration of Tantrum Cycle 3

The decrease in tantrum duration in cycle III is clearly illustrated in Figure 16, which shows that the average tantrum duration decreased to 9 minutes per session. Figure 17 shows a stable frequency of tantrums on two occasions at each meeting, indicating that tantrum behavior no longer fluctuates as in the previous cycle. Meanwhile, Graph 18 shows the most significant decrease in intensity, where all tantrum episodes are in the mild to moderate category, with an average intensity of 1.25. There was no longer any tantrum behavior in the severe category as in cycles I and II. Qualitatively, the form of tantrums changes to light crying and refusal of instructions that are easily transferred, and is no longer accompanied by behavior that is harmful to self or others.

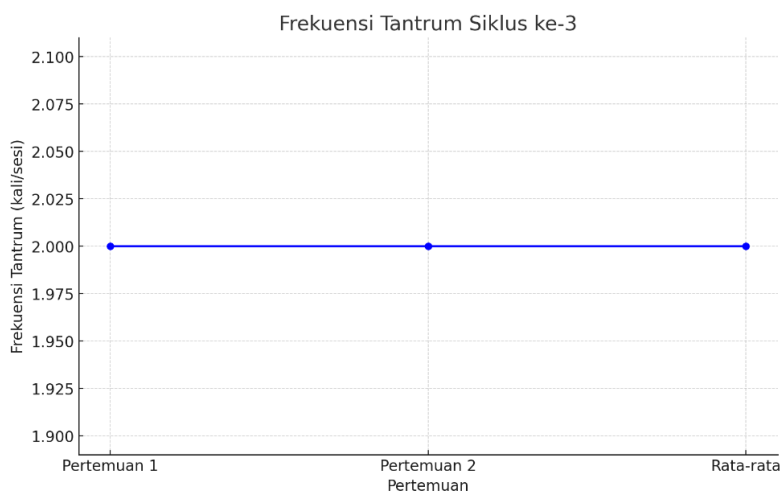


Figure 17. 3rd Cycle Tantrum Frequency

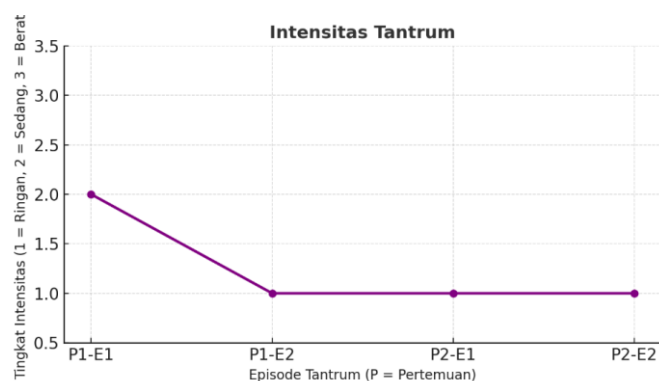


Figure 18. Tantrum Intensity

Overall, the research results show a consistent decreasing trend from cycle to cycle, both in terms of duration, frequency and intensity of tantrums. Improving the time-out room settings in cycle III proved to play an important role in increasing the effectiveness of the intervention. An environment with minimal distractions helps subjects calm down more quickly, reduces reinforcement from the surrounding environment, and supports the emotional regulation process more optimally. By achieving indicators of success in cycle III, this research shows that the time-out strategy which is applied consistently and supported by appropriate environmental settings is effective in reducing tantrum behavior in the second subject who has more severe tantrum characteristics.

### **Discussion**

The results of this study were obtained through three cycles of intervention involving two students with Autism Spectrum Disorder (ASD) aimed at reducing tantrum behavior through the implementation of a time-out strategy. The discussion focuses on interpreting the changes in the frequency, duration, and intensity of tantrums observed during the intervention process. These findings are interpreted by linking them with relevant behavior modification theories and previous empirical studies on behavioral interventions for children with ASD. In the first cycle, both subjects still exhibited tantrum behavior with relatively high frequency and duration, while the intensity remained in the moderate to severe category. This condition indicates that the initial implementation of the time-out strategy had not yet produced a significant impact. Such findings are common in the early stage of behavioral interventions where students are still adapting to new rules and consequences. Previous research has shown that behavioral interventions for children with ASD often require an adaptation phase before consistent behavioral changes occur. For example, Laura Schreibman and colleagues found that behavioral interventions for children with ASD frequently show gradual progress because children must first learn the relationship between behavior and consequences in structured learning environments (Schreibman et al., 2020).

The tantrum behavior observed in cycle I was also influenced by classroom environmental conditions that were not yet fully conducive. A busy classroom atmosphere, repetitive learning routines, and the absence of a dedicated quiet time-out area contributed to prolonged tantrum duration and higher behavioral intensity. Environmental stimuli have been widely recognized as an important factor affecting emotional regulation in children with autism. Research by Catherine Lord and colleagues emphasized that sensory stimuli such as noise, crowding, and environmental unpredictability may trigger emotional dysregulation and behavioral outbursts in individuals with ASD (Lord et al., 2020). In addition, studies on educational interventions for autism highlight that structured and low-distraction environments can significantly support behavioral control and learning engagement (Odom et al., 2021).

Entering cycle II, improvements began to appear in both subjects, particularly in terms of reduced tantrum duration and lower behavioral intensity. The intervention was refined by providing a more structured time-out area, although it was still located in the corner of the classroom and not completely free from distractions. Students began to respond more quickly to teacher directions and were able to calm themselves in a shorter period of time. These findings reflect the principle of operant conditioning, where consistent consequences help shape adaptive behavior over time. Previous studies in Applied Behavior Analysis also demonstrate that consistent behavioral consequences, including time-out procedures, can effectively reduce disruptive behaviors in children with developmental disorders (Tarbox et al., 2021).

However, the effectiveness of the time-out strategy in cycle II was still limited for subject 2, who exhibited more complex tantrum characteristics accompanied by aggressive behavior and self-injury. Environmental distractions within the classroom continued to function as unintended social reinforcers, preventing a substantial reduction in tantrum frequency. Research in behavior analysis indicates that the success of time-out interventions strongly depends on minimizing reinforcing stimuli during the intervention process. If the child continues to receive attention or stimulation, maladaptive behavior may persist (Fisher et al., 2022).

The most significant behavioral changes occurred in cycle III after the intervention was modified by providing a dedicated time-out room that was completely quiet and free from distractions. At this stage, both subjects demonstrated a consistent reduction in tantrum frequency, duration, and intensity. Aggressive behavior and self-injury in subject 2 no longer appeared, while subject 1 showed an increased ability to calm down independently. These findings are consistent with research in Applied Behavior Analysis (ABA) which emphasizes the importance of environmental control and structured consequences in reducing maladaptive behaviors among children with autism (Tarbox et al., 2021; Fisher et al., 2022).

Comparison between the two subjects also indicates that although the time-out strategy was effective for both students, the speed and degree of behavioral improvement varied depending on individual characteristics. The student with moderate tantrum behavior responded more quickly than the student who initially

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displayed severe tantrums and aggressive behavior. Similar findings were reported in autism intervention research which shows that behavioral intervention outcomes vary depending on symptom severity, emotional regulation ability, and individual behavioral profiles (Schreibman et al., 2020).

Overall, the results of this study confirm that the time-out strategy is effective in reducing tantrum behavior in students with ASD when implemented consistently, gradually, and within a controlled environment. These findings support previous studies emphasizing that structured behavioral management, environmental modification, and consistent reinforcement are essential components in reducing maladaptive behavior in children with autism. Therefore, the time-out strategy can be recommended as a practical, evidence-based, and safe behavioral management approach that can be implemented by teachers in Special Schools to support students with Autism Spectrum Disorder.

#### **4. Conclusion**

Based on the results of Classroom Action Research (CAR) implementing the time-out strategy across several learning cycles for students with Autism Spectrum Disorder (ASD), it can be concluded that this strategy effectively reduces tantrum behavior in the classroom. The structured and consistent application of time-out decreased the frequency of tantrums, which initially occurred repeatedly during a single learning session but gradually became less frequent in later cycles. Students began to understand the relationship between their behavior and the consequences given, helping them regulate their responses more appropriately.

In addition, the duration of tantrums also decreased. Tantrums that previously lasted for a long time and disrupted the learning process became shorter, allowing students to calm down more quickly and return to the learning activity. This improvement created a more conducive classroom atmosphere and increased learning effectiveness. Overall, the time-out strategy reduced the frequency, duration, and intensity of tantrum behavior. The findings indicate that time-out functions not only as a behavioral control strategy but also as a constructive learning tool that helps students develop self-regulation and emotional control. Therefore, consistent collaboration between teachers, schools, and parents is essential to support the successful implementation of this strategy in managing behavior among students with ASD.

#### **References**

- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders (5th ed., text rev.)*. American Psychiatric Publishing.
- Arikunto, S., Suhardjono, & Supardi. (2015). *Penelitian tindakan kelas*. Bumi Aksara.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis (3rd ed.)*. Pearson.
-

- 
- Fisher, W. W., Greer, B. D., Fuhrman, A. M., Saini, V., & Simmons, C. A. (2022). Functional analysis and treatment of problem behavior. *Journal of Applied Behavior Analysis*, 55(1), 3–22. <https://doi.org/10.1002/jaba.867>
- Jannah, W. J., Melliofatria, M., & Corrina, F. (2025). Enhancing Students' Reading Interest by Developing Augmented Reality-Based Storybooks. *Journal of Educational Sciences*, 9(6), 5343-5357. <https://doi.org/10.31258/jes.9.6.p.5343-5357>
- Kazdin, A. E. (2013). *Behavior modification in applied settings (7th ed.)*. Waveland Press.
- Kemmis, S., & McTaggart, R. (2014). *The action research planner (3rd ed.)*. Springer.
- Khusnunnisa, M., & Andriani, A. E. (2025). Development of Interactive Multimedia Assisted by Augmented Reality for Human Hearing Sense Material. *Journal of Educational Sciences*, 9(5), 4370-4387. <https://doi.org/10.31258/jes.9.5.p.4370-4387>
- Lord, C., Brugha, T. S., Charman, T., Cusack, J., Dumas, G., Frazier, T., ... & Taylor, J. L. (2020). Autism spectrum disorder. *Nature Reviews Disease Primers*, 6(1), 1–23. <https://doi.org/10.1038/s41572-020-00207-3>
- Masrukhin, M. J., Fatih, M., & Alfi, C. (2024). Development of Augmented Reality Based Comic Media Through Digital Library Applications for Visual Communication Capability. *Journal of Educational Sciences*, 8(3), 462-475. <https://doi.org/10.31258/jes.8.3.p.462-475>
- Matson, J. L. (2022). *Handbook of autism and pervasive developmental disorders*. Academic Press.
- Matson, J. L., & Williams, L. W. (2021). Emotion dysregulation in autism spectrum disorder. *Clinical Child Psychology Review*, 24(3), 245–260.
- Miltenberger, R. G. (2023). *Behavior modification: Principles and procedures (8th ed.)*. Cengage Learning.
- Muti'ah, K., Alfi, C., & Fatih, M. (2024). Media Development Fraction Pop Up Book Augmented Reality Based Fraction Material To Improve Numeracy Skills. *Journal of Educational Sciences*, 8(4), 743-759. <https://doi.org/10.31258/jes.8.4.p.743-759>
- Odom, S. L., Thompson, J. L., Hedges, S., Boyd, B. A., Dykstra, J., Duda, M., ... & Bord, A. (2021). Technology-aided interventions and instruction for adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 51, 457–471. <https://doi.org/10.1007/s10803-020-04594-0>
- Oktama, Z., Yulastri, W., & Kharisma, A. (2026). Interactive Media Development Using Augmented Reality Applications to Improve Student Learning Outcomes in Mathematics Learning in Grade V Elementary School. *Journal of Educational Sciences*, 10(1), 143-152. <https://doi.org/10.31258/jes.10.1.p.143-152>
- Schreibman, L., Dawson, G., Stahmer, A., Landa, R., Rogers, S., McGee, G., ... & Halladay, A. (2020). Naturalistic developmental behavioral interventions: Empirically validated treatments for autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 50(8), 2737–2748. <https://doi.org/10.1007/s10803-019-03922-4>
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- 
- Septiani, U., Guspatni, G., Yerimadesi, Y., & Yusmaita, E. (2025). Practicality and Effectiveness of Augmented Reality Integrated Learning Media on the Material of Atomic Theory Development on the Learning Outcomes of Phase E SMA/MA Students. *Journal of Educational Sciences*, 9(1), 90-102. <https://doi.org/10.31258/jes.9.1.p.90-102>
- Sudarno, N. L., Anggoro, S., & Fukui, M. (2025). Development of Augmented Reality Learning Media Based on Inquiry Based Learning Using Assembl Edu on Light and Properties Material. *Journal of Educational Sciences*, 9(5), 3322-3335. <https://doi.org/10.31258/jes.9.5.p.3322-3335>
- Syahrir, F., Zulfuraini, Z., Kamisani, N., Azizah, A., & Pendit, S. S. D. (2025). Development of Learning Modules Based on Augmented Reality (AR) as a Means of Visualizing Abstract Concepts IPAS Theme Knowing Our Earth. *Journal of Educational Sciences*, 9(4), 2647-2658. <https://doi.org/10.31258/jes.9.4.p.2647-2658>
- Tarbox, J., Wilke, A., Najdowski, A., Findel-Pyles, R., Balasanyan, S., Caveney, A., & Tia, B. (2021). A comprehensive guide to applied behavior analysis for autism spectrum disorder. *Behavior Analysis in Practice*, 14(3), 715–728. <https://doi.org/10.1007/s40617-020-00477-7>
- World Health Organization. (2021). *Autism spectrum disorders: Key facts*. WHO Press.
- Zahro, S. F., Amalia, S. N., & Oktaviani, R. T. (2024). Development of Big Book Media Based on Augmented Reality Material on Structure and Function of Plant Parts for Class IV SDN Tlogo 02 Blitar. *Journal of Educational Sciences*, 8(4), 690-715. <https://doi.org/10.31258/jes.8.4.p.690-715>

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