

## Food Grabbing Behavior Modification Program Using Shaping Techniques with Tablet Media for Autistic Children

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### Abstrak

Anak-anak dengan autisme sering mengalami kesulitan dalam berinteraksi sosial dan memahami norma-norma sosial yang berlaku. Oleh karena itu, diperlukan strategi modifikasi perilaku yang tepat untuk membantu anak-anak dengan autisme dalam mengatasi perilaku merebut makanan dan membantu mereka belajar cara berinteraksi sosial yang lebih baik. Penelitian ini bertujuan untuk menggunakan teknik shaping untuk mengubah perilaku siswa autisme yang sering merebut makanan orang lain. Penelitian ini melibatkan penggunaan media tablet sebagai alat untuk memberikan intervensi. Subyek penelitian dalam penelitian ini adalah siswa autisme yang memiliki kecenderungan untuk merebut makanan orang lain. Penelitian ini menggunakan metode Single Subject Research dengan desain A-B. Data pada penelitian ini dikumpulkan melalui dokumentasi audio, foto, video, dan dokumentasi tertulis. Data kemudian dianalisis menggunakan analisis dalam kondisi dan analisis antar kondisi. Hasil penelitian menunjukkan bahwa teknik shaping yang menggunakan media tablet efektif dalam mengubah perilaku siswa autisme yang sering merebut makanan orang lain. Dengan menggunakan teknik shaping, siswa autisme mampu memahami bahwa merebut makanan orang lain tidak benar dan mampu mengendalikan diri untuk tidak melakukannya. Hal ini menunjukkan bahwa penggunaan teknik modifikasi perilaku dengan media tablet dapat membantu siswa autisme dalam mengatasi perilaku yang tidak diinginkan.

**Kata Kunci:** Modifikasi Perilaku, Teknik Shaping, Autis

### Abstract

Children with autism often have difficulty interacting socially and understanding applicable social norms. Therefore, appropriate behavior modification strategies are needed to help autistic children overcome food-grabbing behavior and learn how to interact better socially. This research aims to use shaping techniques to change the behavior of autistic students who often grab other people's food. This research involves the use of tablet media as a tool to provide intervention. The research subjects in this study were autistic students who tended to snatch other people's food. This research uses the Single Subject Research method with an A-B design. Data in this research was collected through audio documentation, photos, videos, and written documentation. The data was then analyzed using within-condition analysis and between-condition analysis. The research results show that the shaping Technique using tablet media effectively changes the behavior of autistic students who often grab other people's food. By using shaping techniques, autistic students can understand that snatching other people's food is not right and can control themselves not to do it. It shows that the use of behavior modification techniques using tablet media can help autistic students overcome unwanted behavior.

**Keywords:** Behavior Modification, Shaping Technique, Autism

## 1. INTRODUCTION

Children with autism often have difficulty interacting socially and understanding applicable social norms. It can lead to rude behavior, such as grabbing a friend's food (Nurfadhillah et al., 2021; Suryani & Dewi, 2018). Some factors contributing to this behavior include difficulty understanding social boundaries, unmet sensory needs, or anxiety (Febtriko et al., 2019; Ozonoff et al., 2011). Additionally, children with autism may also have difficulty verbally expressing their needs, so they may try to obtain food in inappropriate ways (Rogers & Vismara, 2008; Saihu, 2019). Therefore, appropriate behavior modification strategies are needed to help children with autism overcome food-grabbing behavior and help them learn how to interact better socially (Astrini, 2021; Hardi et al., 2022; Rifin & Kurniawan, 2018). One of the techniques used in behavior modification is the shaping Technique, which involves shaping the desired behavior through a gradual reinforcement (Cooper et al., 2019;

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Dewi & Retnoningtyas, 2019). In addition, tablet media in this program offers the potential to be an interesting and effective learning tool for children with autism (Padmadewi & Artini, 2017; Stiller & Möble, 2018; Suryani & Dewi, 2018). Several researchers have explored tablet-shaping techniques to change disobedient behavior in autistic children (Lane & Radesky, 2019; Migliore et al., 2021). In another study, shaping techniques were used by utilizing interactive applications on tablet media to teach children with autism about daily routines, such as bathing or cleaning the bedroom (Anggriana et al., 2018; Ishartiwi et al., 2023). This study showed significant improvements in children's ability to follow routines and practice desired behaviors.

Other research focuses on shaping techniques using tablet media to improve the mathematical abilities of children with autism (Rachmawaty, 2015). In this research, they developed a specially designed mathematical application with solution steps presented in stages. Children with autism are then given positive reinforcement when they successfully follow the steps. The results showed significant improvements in mathematical understanding and problem-solving abilities in children in this program (Mayton et al., 2014; Riga et al., 2020; Stiller & Möble, 2018).

In another study, shaping techniques using tablet media were used to teach autistic children about social skills and appropriate social interactions (Rustandar & Widinarsih, 2023). Through interactive applications that visualize social situations and provide immediate feedback, children with autism can learn and practice desired social behaviors. The results showed significant improvements in children's ability to interact socially more effectively (Machalicek & O'Reilly, 2015; Rapp et al., 2018).

Based on the problem's presentation and previous research results, researchers are interested in investigating the effectiveness of a behavior modification program that uses shaping techniques with tablet media to change disobedient behavior in autistic children. The purpose of this study was to evaluate the impact of this program on children's ability to follow directions, routines, and abilities in mathematics and social interaction. I hope this research can provide insight.

## **2. METHODS**

In this research, the method used is Single Subject Research. Single Subject Research is an experimental research method used to evaluate certain interventions on the behavior of a single subject with assessments carried out repeatedly over a while (Prahmana, 2021). This method was chosen because it is effective in evaluating the effect of a treatment on a single subject, which is difficult to observe in a group of subjects. In a behavior modification program using tablet media for autistic children, shaping techniques can form new behavior by providing gradual positive reinforcement for behavior closer to the desired behavior. Speech act expressions can be used as positive reinforcement for desired behavior. Positive reinforcement can take the form of verbal expressions such as praise or positive words conveyed via tablet media. Related variables or target behavior measurements are repeated in research using the Single Subject Research method to see the intervention's effect. The research design used is an A-B design, where child behavior data is taken in two conditions or phases: the baseline and the intervention phases. The data collected is then analyzed using visual analysis with graphic data to interpret the effects of the intervention provided.

In a behavior modification program using tablet media, speech act expression applications can be recorded and analyzed as part of the data collected. Thus, the speech act expression application can indicate the effectiveness of the intervention provided in a behavior modification program using tablet media for autistic children.

### 3. RESULTS AND DISCUSSION

#### Results

Single Subject Research research was conducted at SLB Widya Tama Surabaya. The sole subject in this study was a nine-year-old boy with a diagnosis of autism. Based on observations and interviews with parents, it is known that the child often shows spontaneous behavior in grabbing food from friends and other people.

Next, in the intervention stage, researchers used shaping techniques via tablet media with speech act applications to teach autistic students about not grabbing other people's food. The application uses positive reinforcement techniques to help students understand and master not grabbing the food they need. Researchers collect data through audio, photos, videos, and written documentation during the intervention process to evaluate student progress. After several intervention sessions, students were asked to seize food in the wild with the help of shaping techniques learned through tablet media. The results of this intervention show that students have mastered the skill of snatching other people's food well. Documentation of the intervention phase is shown in [Figure 1](#).



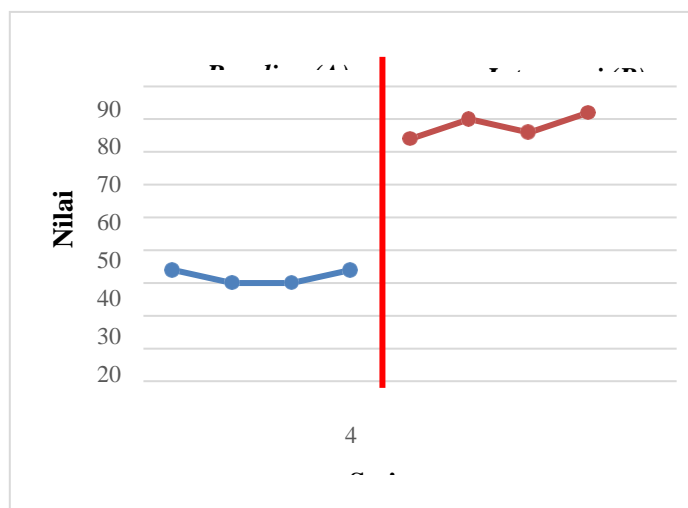
**Figure 1.** Intervention Phase

After implementation of the intervention, all data is then collected. The data was collected from baseline to intervention and then analyzed. The data collected is in the form of evaluation results, as seen in [Table 1](#).

**Table 1.** Student Evaluation Results

Phase	Implementation Date	Score
Baseline	8 May 2020	34
	9 May 2020	30
	10 May 2020	30
	11 May 2020	34
Intervention	15 May 2020	74
	16 May 2020	80
	17 May 2020	76
	18 May 2020	82

[Table 1](#) describes the results of student evaluations in the baseline phase and intervention phase before and after implementing the treatment. These data indicate an increase in student scores from the baseline phase, with an average score of 32, to the intervention phase, with an average score of 78. It shows that the intervention has a significant impact on student learning outcomes. A graphic visualization of the results of the student learning evaluation can be found in [Figure 2](#).



**Figure 2.** Graphic Presentation of Visual Analysis Data for the Baseline Phase and Intervention Phase

Based on the evaluation data obtained, data analysis was then carried out in a single condition to understand the initial state of the research subject. The results of the analysis in these conditions are documented in [Table 2](#).

**Table 2.** Summary of Visual Analysis Results in Conditions

No.	Condition	A	B
1	Condition Length	4	4
2	Directional Inclination		
3	Stability Trends	Stable (100%)	Stable (100%)
4	Trace Tendencies	(=)	(=)
5	Stability and Range Trends	Stable 30-34	Stable 74-82
6	Level Change	34-30 (+4)	82-74 (+8)

[Table 2](#) shows the length of conditions or sessions in the baseline condition, which is four sessions, while in the intervention condition, there are four conditions. The directional trend in the baseline phase shows a flat trend, which indicates a positive but less significant change. On the other hand, in the intervention phase, an increasing trend was seen, indicating positive and significant changes. Furthermore, the stability of the data in [Table 4](#) shows that the data in both phases, both baseline and intervention phases, has good stability. In addition, in the baseline phase, there was a flat trend, which indicated a change in the data but was less significant, whereas, in the intervention phase, there was an increasing trend, which indicated a significant change in the data. The data stability range in the baseline phase remained stable between 30 and 34; in the intervention phase, it also remained stable between 74 and 82. Furthermore, changes in levels were seen, which showed the difference between the change in data in the baseline condition of +4 and the change in data in the intervention condition of +8.

After analyzing the data using within-condition analysis, an inter-condition analysis is conducted to evaluate the data in various conditions. Even though the components analyzed

are almost the same as the within-condition analysis, this analysis was carried out by considering the baseline and the intervention conditions. Table 3 shows the results of the analysis between conditions from this study.

**Table 3.** Summary of Visual Analysis Results Between Conditions

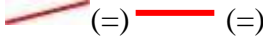
No.	Condition Comparison	B:A (2:1)
1	The number of variables changed	1
2	Changes in directional trends and their effects	 (=) (=)
3	Changes in stability tendencies	Stable to stable
4	Level change	(34 – 74) (+) 40
5	Overlap percentage	0%

Table 3 displays the data collection and analysis results in this Single Subject Research study, with the observed variable being the behavior of taking food from friends. There is a trend towards a change in direction in the intervention phase graph, which shows an increase in this behavior. It indicates a visible behavior change, whereas in the baseline phase, there is visible stability in behavior, although the change is significantly less visible.

Furthermore, a stability trend shows that the data from the baseline to the intervention phase tends to be stable. There was also a change in level, with a change in score from the baseline phase to the intervention phase of +40. It shows an improvement in behavior with a score difference of 40. In addition, there is no overlap between the baseline and intervention phase data, with an overlap percentage of 0%. It shows that the data in this study do not overlap, so it can be said that the observed behavioral changes occurred clearly between the baseline and intervention phases.

## Discussion

Based on the evaluation results, the shaping Technique via tablet media with speech act material was proven to be effective in modifying the behavior of autistic children in taking food. It aligns with previous research, which shows that shaping techniques can increase adaptive behavior in children with autism (Lim & Choo, 2019). Apart from that, other research also shows that the use of tablet media can increase the motivation and involvement of children with autism in intervention programs (Lancioni et al., 2014). Speech acts have also proven effective in forming positive behavior in autistic children through positive reinforcement (Fitriana, 2013; Kazdin, 2017; Kurdghelashvili, 2015). However, it is important to remember that the use of technology must be supervised and limited to ensure the development of the social skills of autistic children.

Based on observations and interviews with parents, it is known that the child often shows spontaneous behavior in grabbing food from friends and other people. These findings are consistent with previous research indicating that children with autism tend to have difficulty controlling their eating behavior, including a tendency to take other people's food (Suryani & Dewi, 2018). Even though the components analyzed are almost the same as the within-condition analysis, this analysis was carried out by considering the baseline and the intervention conditions.

Previous research found that smartphone-based application media can increase students' enthusiasm for learning and improve their ability to recognize flat shapes and develop themselves in mentally disabled children at Skh Pandhita (Pratama et al., 2019). It is proven by the improvements experienced by children so that little by little, children can recognize and improve their ability to recognize flat shapes and develop themselves. It is also

supported by other research. Thus, the research hypothesis is accepted, which is that the Discrete Trial Training (DTT) technique is effective in increasing the ability of autistic children to recognize primary colors at SLB Autisma Mutiara Bangsa Padang (Amalia, 2016).

The implications of this research may increase understanding of effective intervention strategies for children with autism and contribute to the development of behavior modification programs. This research can benefit autistic children by showing the effectiveness of tablet media-shaping techniques in changing food-grabbing behavior. If implemented more widely, this program could help autistic children develop better eating habits. In addition, the research results can open the door to developing other intervention methods that use shaping techniques and tablet media to address specific behavioral challenges in autistic children. It can help researchers and practitioners in designing more effective intervention programs.

However, this research also has limitations. Research limitations can arise from contextual factors, such as the home environment, family support, and other environmental factors that cannot be fully controlled in the research setting. This research opens the door to new questions that require further research. For example, whether the program's effects persist in the long term or whether certain modifications are needed to adapt to individual variations in autistic children.

#### 4. CONCLUSION

The behavior of autistic children before intervention received an average score of 32 (on a scale of 100). Furthermore, the average score of students after intervention in the form of shaping techniques was 78 (on a scale of 100). It shows an increased behavior change score of not snatching other people's food. On the other hand, children with autism often have difficulty controlling impulses and appropriate social behavior. Some children with autism may tend to snatch food from others. Factors influencing this behavior can vary, including internal factors such as difficulty in controlling impulses and understanding social rules and external factors such as the situation or environment that triggers the behavior. It is important to understand the factors that influence the behavior of children with autism and develop appropriate interventions to help children develop appropriate social skills.

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