Prompting Technique Using Playdough Media: Enhancing Fine Motor Skills in Children with Moderate Intellectual Disability

Prianggi Amelasasih[1], Setyani Alfinuha[2]
[1-2]Fakultas Psikologi Universitas Muhammadiyah Gresik

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Abstract
This research aims to see the effectiveness of prompting techniques using playdough media in improving the fine motor skills of children with moderate intellectual disability. This research uses a single case experimental design. This research was conducted on one participant who was selected using the purposive sampling method. Quantitative analysis techniques use trend analysis by comparing trends in the baseline phase and treatment phase conditions. The results showed that there were changes in the participants' motor skills before and after the intervention. The subject stated that there were changes in fine motor skills in the research subjects after treatment with the prompting technique using playdough media. These changes can be seen from the fine motor aspect, including the strength of the fingertips, strength of the palm and knuckles, strength of the thumb, coordination between the hands.

Keyword : Playdough Media; Moderate Intellectual Disability; Fine Motor; Prompting Technique

Abstrak
Dalam penelitian ini bertujuan untuk melihat efektifitas teknik prompting menggunakan media playdough dalam meningkatkan kemampuan motorik halus anak moderate intelectual disability. Penelitian ini menggunakan desain eksperimen single case experiment design. Penelitian ini dilakukan terhadap satu partisipan yang dipilih menggunakan metode purposive sampling. Teknik analisa kuantitatif menggunakan trend analysis dengan membandingkan trend pada kondisi baseline phase dan treatment phase. Hasil penelitian menunjukkan bahwa terdapat perubahan kemampuan motorik dari partisipan sebelum dan setelah intervensi. Subjek bahwa terdapat perubahan motorik halus pada subjek penelitian setelah dilakukan treatment dengan teknik prompting dengan media playdough. Perubahan tersebut terlihat dari aspek motorik halus diantaranya adalah kekuatan ujung jari, kekuatan telapak tangan dan ruas jari, kekuatan ibu jari, koordinasi antar tangan.

Kata Kunci : Media Playdough; Moderate Intelectual Disability; Motorik Halus; Teknik Prompting

Introduction

The right to proper education aims to develop each child's potential according to their individual talents and abilities. Education also serves as a fundamental effort to cultivate students' potential. The various strengths or potentials developed through education include spiritual strength, self-control, personality, intelligence,

[1] Corresponding author E-mail addresses
prianggi_amelasasih@umg.ac.id (Prianggi Amelasasih)

behavior, and various skills that are beneficial to oneself, society, the nation, and the state. To achieve these objectives, schools serve as one of the manifestations of educational goals. As with learning for typical students, the learning process for children with special needs (CSN) must also be specially designed to suit their conditions and needs (Arsanti & Kuncoro, 2022).

One type of CSN is children with intellectual disabilities. Intellectual disability is a disorder that begins during the developmental period and is characterized by deficits in intellectual functioning and adaptive functioning in conceptual, social, and practical domains. These deficits are evident in limited reasoning, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience. This condition requires clinical assessment using standardized individual intelligence tests. Another hallmark of children with intellectual disabilities is limited adaptive functioning, such as limitations in one or more areas of daily living skills, including communication, social skills, and independent living across various environments such as home, school, workplace, and community (APA, 2013). The severity of intellectual disability is categorized into mild, moderate, and profound. These categories are based on adaptive functioning rather than solely on IQ scores, as adaptive functioning determines the level of support required by individuals with intellectual disabilities (APA, 2013). The more severe the intellectual disability, the more complex the required interventions (Sari et al., 2017).

According to the American Psychiatric Association (2013), the characteristics of individuals with intellectual disabilities fall into three domains: conceptual, social, and practical. These individuals often require support for all activities. Every parent hopes for their child to be independent; however, in reality, many individuals with intellectual disabilities remain dependent on their parents or caregivers for daily activities, especially self-care. The high level of dependency in self-care activities such as maintaining personal hygiene, eating, and health awareness places a moderate burden on parents and caregivers (Purnamasari et al., 2022). One of the common issues faced by children with intellectual disabilities is the lack of fine motor skills. These children often experience various delays in physical movement, the use of hands and feet, sitting, and speaking. Such limitations hinder the development of their fine motor skills (Retnaningsih & Hidayat, 2012).

Limited fine motor skills affect their ability to perform self-help activities such as dressing, combing hair, tying shoelaces, and more. These limitations also impact their academic performance, such as difficulties in writing. Typically, individuals without disabilities do not require assistance for basic self-care or simple academic activities like writing. However, individuals with intellectual disabilities often experience developmental delays, including in fine motor skills, and may remain unable to care for themselves independently even into adulthood (Widajati & Mahmudah, 2022).

Cognitive and fine motor limitations in individuals with intellectual disabilities result in a lack of mastery in self-help skills. Consequently, they are at high risk of social isolation due to their limited ability to carry out self-care activities and their heavy reliance on family support (Widajati & Mahmudah, 2022). In fact, self-help skills are basic competencies ideally possessed by everyone, including individuals with intellectual disabilities. Unfortunately, their self-help capabilities remain very limited due to their cognitive and fine motor impairments. In reality,

individuals with moderate to severe intellectual disabilities fall under the "trainable" category, meaning they still possess the potential to learn simple and concrete tasks such as self-help skills. The American Psychiatric Association (2013) notes that individuals in the moderate and severe categories can perform self-help activities such as eating, dressing, and maintaining hygiene, although these require more time and consistent training to foster independence.

The combination of limited cognitive and fine motor skills, along with the lack of habituation, training, and guidance from their surroundings, makes it even more difficult for children with intellectual disabilities to carry out self-help activities independently. Ideally, children should be able to eat, clean themselves, and dress on their own. This condition poses a problem that demands effective solutions. One method to improve fine motor skills is through prompting techniques. Prompting is a behavioral technique used to encourage the occurrence of a desired behavior, such as fine motor skill development. This technique begins by providing a stimulus before the expected behavior appears. The function of prompting is to elicit the desired behavior using appropriate examples so the child can achieve the targeted behavior (Miltenberger, 2012). It is recommended to use the least intrusive type of prompt possible. Miltenberger (2012) ranks prompts from most to least intrusive as physical prompts, modeling prompts, gestural prompts, and verbal prompts. These prompts can be used individually, in combination, or alongside other media (Larassati & Hartiani, 2018).

Based on the aforementioned explanation, this study aims to examine the effectiveness of the prompting technique using playdough media to enhance the fine motor skills of children with moderate intellectual disabilities. Playdough has been proven effective in improving fine motor skills (South Warwickshire Foundation Trust, 2017). It specifically helps enhance hand and finger flexibility and coordination (Suryameng, 2016). When introduced gradually and tailored to the child's needs and problems, playdough media can significantly improve fine motor abilities (South Warwickshire Foundation Trust, 2017). Improved fine motor skills enable children to perform a variety of tasks such as eating, writing, drawing, matching shapes, beading, cutting, folding, dressing, and engaging in hobbies.

Research Method

This study employed a single case experimental design. Data analysis was conducted on an individual basis due to the limited number of participants (Yuwanto, 2012). The single-case experimental design involves individual analysis that includes several data points during the baseline phase and treatment phase. The subject in this study consisted of one individual diagnosed with moderate intellectual disability, characterized by limited fine motor skills.

The research instrument was an intervention utilizing a prompting technique with playdough media, which was adapted from the playdough intervention steps of South Warwickshire Foundation Trust (2017). The prompting techniques used included modeling, physical prompting, and verbal prompting (Miltenberger, 2012). The intervention was conducted over six sessions, each lasting between 90 to 120 minutes. The data analysis for both the baseline phase and treatment phase employed graphical analysis or visual inspection (Hardhiyanti et al., 2020). Quantitative analysis during the intervention phase was conducted to assess the

impact of the intervention on fine motor skills. This quantitative analysis used trend analysis, comparing the trends observed in the baseline and treatment phases. In addition, qualitative data from interviews and observations were analyzed narratively to provide a more comprehensive understanding of the supporting factors that contributed to the effectiveness of the intervention (Yuwanto, 2012).

Results

Based on assessments conducted through interviews, observations, and psychological testing, the following conclusions can be drawn: the participant was identified as having a moderate level of intellectual disability (IQ: 37). The most prominent issue observed in the participant was deficiency in fine motor skills, which impacted their self-help abilities. Therefore, this study implemented a treatment aimed at improving fine motor skills. The results of the intervention are presented below:

Table 1. Summary of Intervention Results

	Day						Median
	1	2	3	4	5	6	
Baseline	3	4	4	5	3	2	3,5
Treatment	8	7	7	8	9	8	8

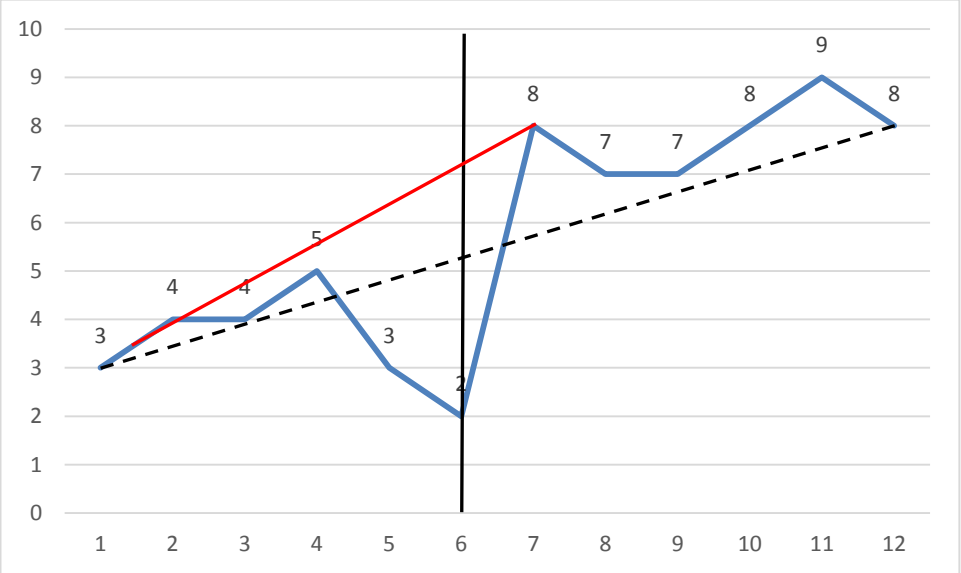

Figure 1. Trend Analysis Results

Figure 1 illustrates changes in the participant's fine motor skills before and after the intervention. It shows developments in fingertip strength, palm and finger joint strength, thumb strength, and inter-hand coordination. The following explanation highlights the differences observed before and after the intervention based on the aspects of fine motor development.

Table 3. Assessment Checklist Before and After Intervention

No.	Aspect	Indicator	Before		After	
			Yes	No	Yes	No
1	Fingertip strength	The subject can poke holes in playdough using finger joints.		✓		✓
		The subject can form a mound with playdough.		✓	✓	
		The subject can create grooves in playdough using two fingers.		✓	✓	
		The subject can pick up flattened playdough from the table.	✓		✓	
2	Palm and finger joint strength	The subject can squeeze playdough.		✓	✓	
		The subject can spread playdough using fingertips.		✓		✓
		The subject can roll playdough using palms.	✓		✓	
		The subject can flatten playdough using palms.		✓	✓	
3	Thumb strength	The subject can press playdough using the thumb.		✓	✓	
		The subject can pull playdough using the thumb.		✓	✓	
4	Inter-hand coordination	The subject can pull playdough using both hands.		✓	✓	
		The subject can form round shapes using both hands		✓	✓	
6	Object handling ability	The subject can hold a bottle.	✓		✓	
		The subject can correctly hold a writing instrument.		✓		✓
		The subject can open a bottle cap.		✓		✓
		The subject can close a bottle cap.		✓		✓
		The subject can unbutton a shirt.		✓		✓
		The subject can button a shirt.		✓		✓

Based on the data in Table 3, there is a noticeable improvement in the participant's fine motor skills after the intervention using the prompting technique with playdough media. Improvements were observed in aspects such as fingertip strength, palm and finger joint strength, thumb strength, and inter-hand coordination.

In the initial baseline phase (A1), during the first session, the participant scored 11%. In sessions two to five, the score increased to 16%. During the intervention phase (B), conducted over eight sessions, the participant scored 22% in sessions one to three, 33% in sessions four and five, 50% in session six, and 61% in sessions seven and eight. In the second baseline phase (A2), without intervention, the participant scored 22% in the first session and 27% in sessions two to four. The comparison of the initial baseline phase (A1), intervention phase (B), and the post-intervention baseline phase (A2) can be seen in the graph below:

Figure 2 based on the graph above, it can be seen that there is a trend of improvement in the participant's fine motor skills during the baseline (A1) and intervention (B) phases. However, a decline was observed in the baseline (A2) phase, where the highest score of 61% during intervention dropped to 27% after the intervention was no longer provided.

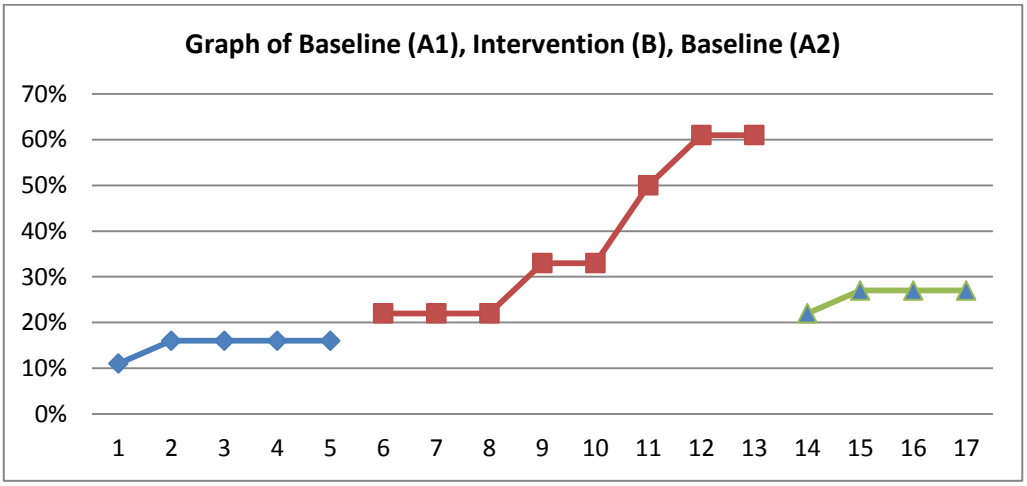

Figure 2. Baseline (A1), Intervention (B), and Baseline (A2) Graph

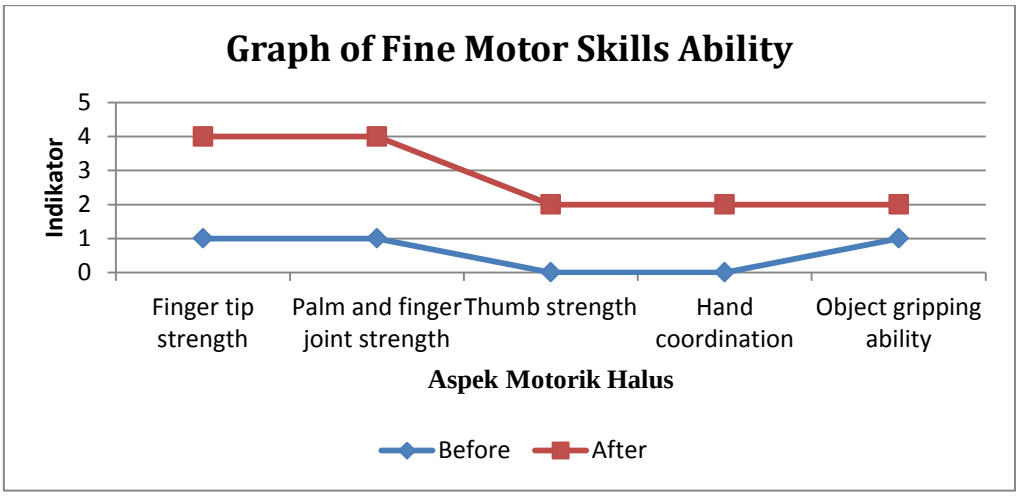

Figure 3. Graph of Fine Motor Skills Improvement

Based on Figure 3 above, the results before and after the intervention using playdough media are presented. Before the intervention, in the fingertip strength aspect, the subject was able to achieve 1 out of 4 indicators. In the palm and finger joint strength aspect, 3 out of 4 indicators were achieved. In the thumb strength aspect, 2 out of 2 indicators were achieved. For hand coordination, 2 out of 2 indicators were achieved, and in the object gripping ability aspect, only 1 out of 6 indicators was achieved. However, when no treatment was given, there was a decline in the indicators previously achieved by the subject, with only 5 indicators remaining achieved.

Discussion

In this study, the subject is a child with moderate intellectual disability, which results in delays in growth and development. Khairiyah (2018) stated, "In children with special needs, the development of fine motor skills experiences delays compared to typically developing children." This statement explains that there is a delay in the development of fine motor skills in children with special needs.

The researcher directly assessed the subject's initial (baseline) ability in performing fine motor skills. The measurement tool used was percentage, which

indicates the number of occurrences of a behavior or event compared to the total possible occurrences, then multiplied by 100% (Yarsiah & Kasiyati, 2019). Data collection during the baseline condition (A1) was carried out over 5 sessions by administering a test consisting of 18 indicators of fine motor skills using playdough. Observations continued in the intervention condition (B) over 8 sessions, in which the subject was given playdough, followed by a second baseline condition (A2) consisting of 4 sessions without any intervention.

Based on the results in Figure 2, a change was observed after the prompting technique was applied, with a success rate of 61%. This aligns with previous research, which found that implementing simple intervention programs using prompts and positive reinforcement showed higher success rates compared to complex interventions involving electronic devices (Meindl & Malone, 2011). Sujiono (2009) also explained that coordination of fine motor movements between the hands and eyes can be developed through activities such as molding with playdough, clay, plasticine, drawing, coloring, and cutting. This is in accordance with the benefits of playdough as stated by Rahmawati (2014), who suggested that playing with playdough helps stimulate fine motor skills and supports children's concentration in learning activities, making them enjoy performing various movements while playing.

Based on the results in Figure 3, which shows the improvement of fine motor skills in the research subject, this is consistent with previous findings that behavior modification programs using prompting techniques successfully improved the subject's fine motor coordination, including bilateral hand coordination. Kazdin (2013) stated that prompting techniques often succeed in shaping and maintaining new behaviors in children. This technique helps children master the target behaviors expected of them (Miltenberger, 2012).

The effectiveness of prompting techniques in improving children's behaviors has been proven by several previous studies, including those by Ingvarsson & Hollobaugh (2011), Mechling (2007), and Mosk & Bucher (1984). It can be concluded that using appropriate learning media and methods is closely related to the improvement of the subject's fine motor skills (Chasanah & Pradipta, 2019). Moreover, intensive training allows children to button their shirts in a relatively short time. These results indicate that practicing self-care skills such as buttoning when done repeatedly and even as part of a daily routine can help children become accustomed to the activity, and over time, they become increasingly skilled at performing it (Narayan & Kutty, 2001).

Conclusion

The hypothesis proposed in this study was the effectiveness of the prompting technique using playdough media in improving fine motor skills in children with moderate intellectual disability. Based on the research conducted, it was shown that the prompting technique using playdough is effective in enhancing fine motor skills in children with moderate intellectual disability.

Recommendations

Given the positive results of this intervention, it is recommended that educators, therapists, and parents apply prompting techniques using engaging media such as playdough in daily learning or therapy sessions. Regular and consistent

practice can significantly support the development of fine motor skills in children with special needs. Future studies are encouraged to expand the sample size and explore the long-term impacts of this intervention on other areas of child development.

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