

The Effect of Busy Books on the Fine Motor Skills of Autistic Students at Karanganyar State Special School

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ABSTRAK

Penelitian ini dilatarbelakangi oleh rendahnya keterampilan motorik halus pada peserta didik autis di SLB Negeri Karanganyar. peserta didik autis sering mengalami kesulitan dalam melakukan aktivitas yang melibatkan keterampilan motorik halus. Tujuan penelitian ini adalah untuk mengetahui pengaruh media busy book terhadap keterampilan motorik halus peserta didik autis di SLB Negeri Karanganyar. Penelitian menggunakan metode **Single Subject Research (SSR)** dengan desain **A-B-A**. Subjek penelitian adalah seorang peserta didik laki-laki dengan autis kelas III di SLB Negeri Karanganyar. Data dikumpulkan melalui observasi menggunakan instrumen penilaian keterampilan motorik halus yang meliputi empat indikator, yaitu mengancingkan baju, menebalkan pola, memasukkan tali ke dalam lubang, dan memindahkan benda kecil dengan penjepit. Hasil penelitian menunjukkan adanya peningkatan signifikan keterampilan motorik halus dari rata-rata 43,10% pada fase baseline-1, menjadi 82,65% pada fase intervensi, dan mencapai 91,70% pada fase baseline-2. Dengan demikian, penelitian ini menyimpulkan bahwa media busy book berpengaruh positif dalam meningkatkan keterampilan motorik halus peserta didik autis.

Kata kunci: keterampilan motorik halus, media busy book, peserta didik autis

ABSTRACT

This study was motivated by the low fine motor skills of autistic students at SLB Negeri Karanganyar. Autistic students often experience difficulties in carrying out activities that involve finger and hand coordination. The purpose of this research was to determine the effect of busy book media on the fine motor skills of autistic students at SLB Negeri Karanganyar. The study employed a **Single Subject Research (SSR)** method with an **A-B-A** design. The subject was a male third-grade student diagnosed with autism. Data were collected through observation using an assessment instrument of fine motor skills, which included four indicators: buttoning clothes, tracing patterns, inserting laces into holes, and moving small objects with tweezers. The results showed a significant improvement in fine motor skills, from an average of 43.10% in the baseline-1 phase, to 82.65% in the intervention phase, and 91.70% in the baseline-2 phase. Therefore, this study concludes that busy book media has a positive effect on improving the fine motor skills of autistic students.

Keywords: fine motor skills, busy book media, autistic students



INTRODUCTION

Autism or autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by impairments in communication, social interaction, and restricted and repetitive patterns of behavior. Global data shows that the prevalence of autism has increased significantly, with an estimated 1 in 68 children affected by this disorder (Zeidan et al., 2022). Children with autism have difficulty understanding and responding to social interactions, exhibit limitations in verbal and nonverbal communication, and have a tendency to maintain certain routines (Manning et al., 2021). In the context of education, the barriers experienced by students with autism are not only in social and communication aspects, but also in fine motor skills. These skills involve the coordination of small muscle movements, especially of the hands and fingers, which are very important in daily activities such as writing, drawing, cutting, or buttoning clothes. Delays in mastering fine motor skills can have an impact on academic ability and independence in life.

Initial observations at the Karanganyar State Special School show that one of the third-grade autistic students still has difficulty performing fine motor activities. The student takes a long time to complete activities such as sticking paper, tying shoelaces, or buttoning clothes. This condition emphasizes the need for more structured learning interventions that are tailored to the characteristics of the student. One strategy that is considered effective in improving fine motor skills is through the use of interactive learning media. Learning media serve as a means of conveying learning messages so that students can understand the material more easily. One relevant medium is a busy book, which is an interactive book made of flannel with various activities such as buttoning clothes, matching shapes, and threading laces through holes. This medium has been proven to stimulate children's fine motor skills through fun play activities (Mufliharsi, 2017).

A number of previous studies support the effectiveness of busy books in developing fine motor skills in children with autism. Maulida (2019) reported an increase in fine motor learning outcomes after busy book intervention was given to third-grade students with autism at SD Muhammadiyah Condongcatur. Dewi's (2022) study also showed that most students with autism experienced an increase in their ability to button their clothes after using this medium. Similar findings were shown by Saraswati (2023), who confirmed the significant effect of busy books on fine motor skills, and Fitriyah et al. (2021), who found that this medium was effective in improving the fine motor skills of children aged 4–5 years. However, previous studies generally used a one-group pretest-posttest design. This study presents a novelty by using a Single Subject Research (SSR) design, which allows for a more in-depth analysis of repeated changes in individual behavior. In addition, the study was conducted at the Karanganyar State Special School, thus providing a different contextual contribution from previous studies.

Based on the above description, this study was conducted to analyze the effect of busy books on the fine motor skills of third-grade autistic students at Karanganyar State Special School. This study is expected to provide an alternative effective learning medium for teachers in improving the basic skills of autistic students, as well as to serve as a basis for further research in the field of special education.

METODE

This study used a quantitative approach with an A–B–A Single Subject Research (SSR) design. This design consisted of three phases, namely baseline-1 (A1), intervention (B), and baseline-2 (A2), thus enabling the analysis of changes in fine motor skills individually after the intervention.

The research subject was a male third-grade student diagnosed with autism at the Karanganyar State Special School. The subject was selected based on initial

observations that showed limitations in fine motor skills, such as buttoning clothes, threading a string through a hole, sticking, and moving small objects.

Data were collected through observation using a rating scale-based assessment instrument containing four indicators of fine motor skills, namely: (1) threading a string through a hole, (2) moving small objects with tweezers, (3) tracing patterns, and (4) buttoning clothes.

The data were analyzed using visual analysis techniques within and between conditions, including condition length, directional tendency, stability level, and level changes between phases. The validity of the instrument was obtained through expert judgment from experts in the fields of autism, measurement, and language, while reliability was obtained through inter-rater agreement from three independent assessors.

Result and Discussion

This study aims to determine the effect of using busy books on the fine motor skills of third-grade autistic students at Karanganyar State Special School. Data on fine motor skills were obtained from measurements in three conditions with a total of 12 sessions, namely three sessions in the baseline-1 phase (A1), six sessions in the intervention phase, and three sessions in the baseline-2 phase. In the baseline-1 phase, the average fine motor skills of the subjects were 43.10%. In the intervention phase, there was an increase compared to the baseline-1 phase (A1), with an average of 82.65%. Then, in the baseline-2 phase (A2), there was another increase, with an average of 91.70%. In this study, the data analysis process used included analysis within conditions and between conditions. Analysis within conditions aimed to evaluate the changes that occurred in each session in one phase, while analysis between conditions focused on the relationship between data changes in different phases. Data stability in each phase was 100%, indicating that the subject data was stable. The percentage of overlap between phases was recorded at 0% in phase A1/B and 16.67% in phase B/A2, which is still relatively low, so the intervention applied was considered to have a significant effect on the variables studied.

Table 1. Recapitulation of Data Results for All Phases from Three Raters

Phase	Session	Observer Score (%)			Average	Category
		1	2	3		
Baseline-1	1	43.8	43.8	37,5	41.7	Low
	2	43,8	43,8	43,8	43,8	Low
	3	43,8	43,8	43,8	43,8	Low
Intervention	1	75	75	81,3	77.1	High
	2	81,3	75	75	77.1	High
	3	81,3	81,3	81,3	81,3	High
	4	81,3	87,5	87,5	85,4	Very High
	5	87,5	87,5	87,5	87,5	Very High

	6	87,5	87,5	87,5	87,5	Very High
	1	87,5	87,5	87,5	87,5	Very High
Baseline-2	2	93,8	93,8	93,8	93,8	Very High
	3	93,8	93,8	93,8	93,8	Very High

The busy books used in this study were colorful with bright colors and attractive shapes that stimulated the students' attention. This made the students want to try them out. In this case, the busy books provided a hands-on learning experience that involved manipulative movements such as buttoning, inserting objects, using tools, and tracing patterns. This is in line with Piaget's opinion (in Alfadhilah., 2025) that students learn more effectively through direct and concrete experiences. Maulida's (2019) research also revealed that the use of busy books has been proven to improve the fine motor skills of autistic students because they are directly involved in real activities.

Each activity in busy books, such as inserting strings into holes, buttoning clothes, tracing patterns, and moving objects with tweezers, requires coordination between the eyes and hands. According to Hurlock (in Sukaeti., 2021), eye-hand coordination is an important aspect of fine motor skills. Additionally, Sumantri (2025) also mentions that activities such as tracing patterns or threading a string through holes can improve students' visual-motor coordination.

The advantage of busy books is that they are durable, so students can use them repeatedly. This repetition is very important for strengthening fine motor skills. According to Thorndike (in Shabhana et al., 2020), the more often the exercise is done, the stronger the relationship between stimulus and response. In line with this, Dewi (2022) shows that consistent use of busy books can improve fine motor skills, especially buttoning clothes, in students with autism.

According to Bandura (in Ansani., 2022), the learning process occurs through modeling, imitation, and indirect reinforcement. In this study, the teacher as the presenter gave examples before the students did it. The students then imitate the modeled activity and receive positive feedback after successfully completing the task. This supports Bandura's theory that students learn more effectively when they observe and imitate, especially in the context of learning practical skills such as fine motor skills. In addition, the pleasant atmosphere created by the visual design of busy book media serves as indirect reinforcement that motivates children to engage in activities actively and independently.

Based on the underlying theory and the results of data analysis in this study, it can be concluded that busy book media has a significant effect on improving fine motor skills in autistic students. This can be seen from the increase in fine motor skills after the intervention. Thus, busy book media has been proven to have an effect on the fine motor skills of third-grade students at the Karanganyar State Special School in the 2025-2026 academic year.

CONCLUSION

Based on data analysis and discussion of the research results, it can be concluded that busy books have an effect on the fine motor skills of third-grade autistic children at the Karanganyar State Special School. The theoretical implications of this study can be used as a reference for the development of theories and further research in the field of Special Education, while in practical terms, the results of this study can be used as a reference for teachers, schools, and other researchers as a source of

information on the influence of busy books that can be used to improve the fine motor skills of autistic students.

Students are expected to maintain the fine motor skills they have learned through busy books and be able to apply them in daily activities to make them more interesting. Teachers are expected to utilize busy books as a variation of media in learning, given their ability to make learning activities more effective, enjoyable, and tailored to the needs of autistic students. Researchers can also develop similar studies with a larger number of subjects, more varied activities in busy book media, or combine it with other learning methods to optimize results. This study can also be used as a reference for the development of media based on the special needs of students in the field of fine motor skills for further research.

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