

Development of a Practical Life Busy Book Learning Medium for Teaching Hand–Eye Coordination at Nurul Ulum Preschool in Malang

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ABSTRACT

Hand–eye coordination is essential for children's development. However, the development of hand–eye coordination among children aged 4–5 years has not yet reached its optimal level, indicating the need for effective learning media to support its development. This study aimed to determine the feasibility and practicality of developing a practical life busy book as a learning medium. The research employed both qualitative and quantitative methods. Data were collected at Nurul Ulum Playgroup, Tajinan, Malang, involving children aged 4–5 years through small-group trials (3 children), medium-group trials (7 children), and large-group trials (12 children). The study adopted the ADDIE research model, which consists of five stages. The findings showed that the material expert validation achieved a score of 93%, while the media expert validation reached 96%, both categorized as highly valid. The trial results obtained percentages of 73% in the small-scale trial, 84% in the medium-scale trial, and 94.5% in the large-scale trial, indicating that this learning medium is highly feasible for use with children aged 4–5 years. It

can be concluded that the practical life busy book is practical and feasible for use in learning activities aimed at improving hand-eye coordination among children aged 4–5 years. The practical life busy book is expected to become an effective learning medium for enhancing the development of hand-eye coordination in children aged 4–5 years.

Introduction

Children's development should not be viewed from only one developmental domain, but rather from several important aspects that need to be enhanced, including cognitive, social, and physical-motor development. Children's growth and development encompass various domains, including language development, gross motor development, and fine motor development (Wahyuningsih et al., 2023). Fine motor skills tend to be overlooked by some parents and teachers because of the assumption that cognitive aspects or children's thinking abilities are more important than other developmental abilities (Nazara & Tegeh, 2023). Motor development refers to progress in mastering physical movements through the interaction between the central nervous system and interconnected muscles (Hurlock, 2015). Therefore, physical-motor development is crucial for early childhood.

Fine motor skills involve the coordination between hand movements and vision, visual-motor abilities, as well as good coordination and control (Fitriyah et al., 2021). Fine motor ability is an innate capacity that must be stimulated through consistent daily routine activities so that children's fine motor development progresses

according to their developmental stage and equips them with essential skills for completing various tasks in their future lives (Wahyudi & Nurjaman, 2018). These activities require coordination between the eyes and hands, as well as the ability to control movements accurately and precisely. Thus, fine motor skills refer to activities or movements involving small muscles that require coordinated movements between the eyes and hands. Examples of fine motor activities for children aged 4–5 years include cutting, stringing beads, writing, coloring, and other related activities (Fitriyah et al., 2021). In this study, these fine motor activities are specifically focused on hand–eye coordination.

The ability to coordinate hand and eye movements simultaneously requires considerable effort and concentration. According to Tutantri (as cited in Kamil, 2023), this ability involves integrating different movements of the eyes and hands into a single coordinated movement performed simultaneously. This ability is directly related to children's fine motor development.

According to Sujiyono (as cited in Fatmawati, 2020), the stages of fine motor development are as follows: (1) at the age of 1–2 years, children are able to pick up small objects using their thumb and index finger, turn two to three pages of a book simultaneously, build towers with blocks, pour water from one glass to another, learn to peel bananas, and turn on the television or use a remote control; (2) at the age of 2–3 years, children are able to cut and paste, drink independently, remove simple clothing, express graphic ideas through scribbling as they wish,

draw lines or circles, and attempt to write simple uppercase letters; (3) at the age of 3–4 years, children develop general motor abilities, targeting skills, cutting and pasting, self-help skills, and the use of graphic tools; (4) at the age of 4–5 years, children are able to build towers consisting of twelve blocks, color within lines, button their clothes, dress independently, color, and cut using scissors; and (5) at the age of 5–6 years, children demonstrate greater precision and control, make fewer mistakes, and are generally able to care for themselves independently. It is emphasized that children's developmental stages cannot be forced because they naturally progress according to their age.

Based on the explanation above, the development of children's hand–eye coordination progresses according to their developmental stages. The stages of hand–eye coordination development are as follows (Lijin, 2024; Corbetta et al., 2018; Gesell, 2013): (a) during infancy (0–1 year), hand–eye coordination involves focusing, observing, reaching, touching, grasping, lifting, and throwing objects; (b) between the ages of 1–3 years, particularly from 15 months to 3 years, children's ability to lift and manipulate objects helps them interact with small objects, master the use of eating utensils, and independently carry various objects; (c) at the age of 4–6 years, the ability to control hand movements becomes increasingly important and supports children's independence; and (d) during adolescence, individuals generally possess mature coordination between their hands and sensory functions. Therefore, it is important to continuously stimulate and improve hand–eye

coordination development during early childhood.

Fine motor skills in children aged 4–5 years can be enhanced through various learning media. For example, Fitriyah et al. (2021) used a busy book to improve children's fine motor skills, while Wahyuningsih et al. (2023) developed finger painting activities to enhance fine motor development. Learning media should be carefully prepared to stimulate children's interest during the learning process. Teachers should also provide opportunities for children to express themselves, develop their ideas and feelings, both verbally and through their creative work (Yuliana & Bahri, 2019). Therefore, it can be said that the use of a busy book as a learning medium encourages children to learn new skills while practicing hand–eye coordination.

Busy Book is a learning medium designed using flannel fabric. The book contains various learning activities, including drawing straight and diagonal lines, recognizing different shapes, and other developmental tasks. The colorful and attractive design of the Busy Book captures children's attention and encourages them to participate actively in learning activities. In this study, the Busy Book learning medium is integrated with the daily lives of young children. Practical life activities are emphasized to help optimize the fine motor development of early childhood.

Practical life refers to a series of activities that imitate everyday tasks in real-life situations with the purpose of developing children's independence and life skills. According to Isjoni, as cited in Khotijah

(2018), practical life consists of daily life activities that are directly implemented within the learning process to develop life skills. The Busy Book medium and practical life activities are integrated into a learning medium entitled the Practical Life Busy Book, which is a book made of colorful flannel fabric, decorated with beads to enhance its attractiveness, and equipped with various learning activities. The Practical Life Busy Book consists of five pages containing practical life activities, including buttoning clothes, tying shoelaces, combing hair, putting on pants, and wearing socks.

This study was conducted at Nurul Ulum Playgroup, located in Purwosekar Village, Tajinan District, Malang Regency. The researchers selected this institution because it was relevant to the research problem. Several children at Nurul Ulum Playgroup had not yet demonstrated optimal fine motor development, particularly in hand–eye coordination, according to their developmental stage. Fine motor development should be stimulated from an early age through appropriate learning activities at school. With suitable learning media, children's fine motor development can be optimized. Therefore, this study aims to determine the practicality and feasibility of the Practical Life Busy Book learning media for children aged 4–5 years at Nurul Ulum Playgroup, Tajinan, Malang.

In addition to the studies conducted by Fitriyah et al. (2021) and Wahyuningsih et al. (2023), as discussed previously, several other studies have also investigated the development of Busy Book media,

fine motor skills, and hand–eye coordination in early childhood. Mariyah Ulfah et al. (2023) found significant evidence that the use of Busy Book media positively influenced the development of children's hand–eye coordination. Similarly, Nasafitri (2024) reported that the use of Busy Book media had a positive and significant effect on improving the fine motor skills of children aged 4–5 years at Dharma Wanita Bukit Gadeng Kindergarten, South Aceh. Furthermore, Erik and Carniyati (2022) demonstrated that the use of a flannel Busy Book was highly effective in improving the fine motor skills of children aged 3–4 years at Al-Irsyad Al-Islamiyyah Playgroup, Cirebon City. Children's skill levels increased significantly from the low category (36%) to a much higher level. However, one study conducted by Saadah et al. (2023) focused solely on fine motor development through coloring activities performed by young children, which mainly trained finger movements. Although children's fine motor abilities increased by 11.66% from Cycle I to Cycle II, several children still did not show significant improvement. Based on these previous studies, it can be concluded that no research has specifically discussed the development of a Practical Life-based Busy Book learning medium. Therefore, the present study is expected to complement and strengthen previous research findings.

Methods

This study employed a Research and Development (R&D) approach using the ADDIE development model. According to Hamzah (2021), ADDIE (Analysis–Design–Development–Implementation–

Evaluation) is a classroom-oriented instructional development model consisting of five stages. In developing the Practical Life Busy Book learning media, the researchers followed the procedural stages of the ADDIE development model.

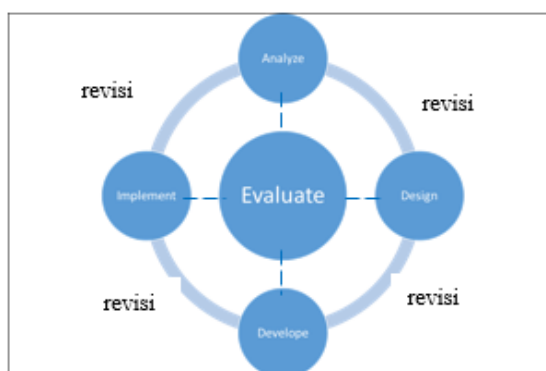


Figure 1. The ADDIE Model. Source: Instructional Design: The ADDIE Model (Branch, 2010).

The research consisted of five stages: (a) Analysis, which involved needs analysis, children's characteristics analysis, curriculum analysis, learning environment analysis, and learning problem analysis to identify appropriate problems and solutions; (b) Design, in which the researchers developed the initial product design; (c) Development, which involved producing and revising the learning media; (d) Implementation, during which product trials were conducted; and (e) Evaluation, which included evaluating both the learning program and the outcomes.

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The trial participants consisted of three children in the small-group trial, seven children in the medium-group trial, and twelve children in the large-group trial. Data were collected through observation and product trials by providing children with opportunities to perform hand–eye coordination activities available in the Practical Life Busy Book learning media. Measuring the hand–eye coordination abilities of children aged 4–5 years. The rubric assessed children's abilities to button clothes, tie shoelaces, comb their hair, wear socks, and put on pants. The assessment rubric is presented in Table 1.

Table 1. Assessment Rubric Criteria

No	Activities	KKTP	Assessment Scale			
			Scale 1	Scale 2	Scale 3	Scale 4
1	Buttoning Clothes	Children are able to button their clothes independently.	The child is not yet able to insert and unbutton	The child begins to be able to insert and unbutton	The child is able to insert and unbutton buttons with minimal assistance.	The child is able to insert and unbutton buttons independently and neatly arrange the

			s.	s.		clothing afterward
2	Tying Shoelaces	Children are able to tie their shoelaces.	The child is not yet able to tie shoelaces.	The child begins to be able to tie shoelaces.	The child is able to tie shoelaces with minimal assistance.	The child is able to tie shoelaces independently without assistance.
3	Combing Hair	Children are able to comb their hair.	The child is unable to hold the comb correctly and is unable to comb the hair from the roots to the ends.	The child is able to hold the comb and comb the hair with minimal assistance.	The child is able to hold the comb correctly and comb the hair independently.	The child is able to comb the hair correctly, tie the hair, and add hair accessories independently.
4	Wearing Socks	Children are able to wear socks.	The child is not yet able to wear socks.	The child begins to be able to wear socks.	The child is able to wear socks with minimal assistance.	The child is able to wear and adjust the socks independently.
5	Putting on Pants	Children are able to put on	The child is not	The child begins	The child is able to put on	The child is able to put on

		pants.	yet able to put on pants.	to be able to put on pants.	pants with minimal assistance.	and adjust the pants independ- ently.
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Result and Discussions

This development study was conducted to produce a learning medium designed to stimulate fine motor development, particularly hand–eye coordination, among children aged 4–5 years at Nurul Ulum Playgroup, Tajinan, Malang. The developed product is expected to benefit both teachers and children in the learning process. The use of learning media is essential for attracting children's attention during classroom activities and making the learning process more engaging and effective (Hasan et al., 2021). The implementation of a Practical Life-based Busy Book as a learning medium can improve children's fine motor skills during learning activities. This finding is consistent with the study conducted by Fahimiyah et al. (2024), which reported that children's average scores in fine motor stimulation increased after using Busy Book media.

The Practical Life Busy Book learning media was developed to improve the fine motor abilities of children aged 4–5 years. A Busy Book is a learning medium that can be used to stimulate fine motor development in children within this age group (Halus & Usia, 2024). This medium contains various activities that children can complete independently or with teacher guidance. In addition to being enjoyable and engaging, learning media provide children with concrete and direct

learning experiences (Hasan et al., 2021). Before implementation, the Practical Life Busy Book underwent validation by a panel of experts.

The material and media validation results indicated that the Practical Life Busy Book received highly positive comments and suggestions and was considered appropriate for product trials. The product achieved a "highly feasible" category in terms of attractiveness and ease of use as a learning medium. Furthermore, the Practical Life Busy Book serves as an effective instructional aid for students during classroom activities, creating an engaging learning environment while facilitating the development of hand-eye coordination among children aged 4–5 years. These findings are consistent with the studies conducted by Ulfah et al. (2023), Nasafitri (2024), and Erik & Carniyati (2022), which demonstrated that Busy Book media effectively improve fine motor development and have positive impacts on children's learning outcomes. Therefore, the present study further strengthens the findings of previous research.

During the implementation stage, product trials were conducted with twelve children aged 4–5 years at Nurul Ulum Playgroup, Tajinan, Malang. The purpose of the trials was to evaluate improvements in children's hand-eye coordination before and after using the learning media. The findings indicated that children's learning outcomes improved after using the Busy Book compared to learning activities conducted without the media. Therefore, the Practical Life Busy Book can be considered valid and feasible for use in the learning process. The

final product of the Practical Life Busy Book learning media is presented in Figure 3.1.

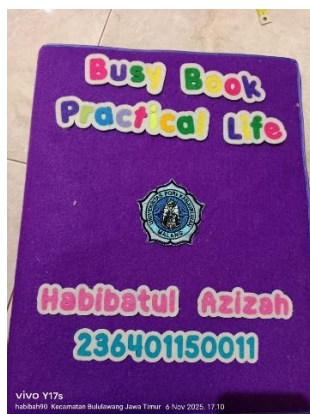


Figure 2. Practical Life Busy Book Learning Media

The developed Practical Life Busy Book was designed to improve hand-eye coordination among children aged 4–5 years through five practical life activities that reflect daily living skills, namely buttoning clothes, tying shoelaces, combing hair, wearing socks, and putting on pants. An example of one of the activities included in the Practical Life Busy Book is presented in Figure 2.



Figure 2. Hair Combing Activity in the Practical Life Busy Book

The Montessori approach was developed by Maria Montessori and

emphasizes direct learning experiences and children's independence through the use of concrete learning materials. One important component of the Montessori approach is Practical Life, which consists of everyday activities designed to develop children's fine motor skills. In this study, the Practical Life Busy Book learning media was developed based on these Montessori principles because children are directly involved in fine motor activities such as buttoning clothes, tying shoelaces, and other practical tasks. This is consistent with the statement of Nofianti et al. (2024), who explained that Montessori is a child-centered approach based on scientific observation of children. The Practical Life aspect focuses on everyday life skills, including fine motor activities related to caring for oneself, caring for the environment, and performing daily routines. Therefore, the Montessori approach is closely related to the development of the Practical Life-based Busy Book learning media. This aspect distinguishes the present study from previous studies discussed in the Introduction section.

Supporting evidence for the effectiveness of this study can also be found in the research conducted by Ita and Dhiu (2022), who developed Busy Book learning media for early literacy instruction among children aged 5–6 years. Their findings demonstrated that the developed Busy Book was highly valid and feasible for improving language skills among Group B children at TKK Caritas Maukeli.

Conclusion

Based on the research findings and discussion, it can be concluded

that the development of the Practical Life-based Busy Book learning media is highly feasible and practical for stimulating the development of hand-eye coordination in children aged 4–5 years at Nurul Ulum Playgroup, Tajinan, Malang. By integrating Montessori principles through practical daily life activities, this learning medium has proven effective in creating an engaging learning environment, fostering children's independence, and providing concrete learning experiences. Therefore, the Practical Life Busy Book is recommended as an innovative and effective alternative learning medium for optimizing the fine motor development of early childhood, particularly in improving hand-eye coordination.

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