E-ISSN: 2962-6110
P-ISSN: 2964-7843
JSRET
jsret.knpub.com
Journal of Scientific Research, Education, and Technology

Development Of Motor Stories (Cermot) To Improve Fine Motor Skills Of Children Aged 4-6 Years At Nurul Hidayah Kindergarten, Purwakarta

Mila Wahyuni, Nita Priyanti
Master of Early Childhood Education, Pancasakti University Bekasi

ABSTRACT

This study aims to Development of Motor Stories (CERMOT) to Improve Fine Motor Skills Of Children Aged 4-6 Years at Nurul Hidayah Kingdegarten, Purwakarta and also to determine whether or not the media that has been developed is feasible. This study uses the type of Research and Development (R&D) research with the development model used is the ADDIE model. The design of the development model in this study goes through 7 stages, namely preliminary research, needs analysis, model design, expert and practitioner tests, model revision, product trials, and final model development. Data collection techniques used consist of observation, interviews and documentation. Data analysis includes analysis of the level of validity, analysis of product feasibility. The results of the study are: (1) The results of the assessment of the feasibility of Motor Stories (CERMOT) by each expert are the value of the Material Expert of 88% (Very Feasible), Media Expert of 89% (Very Feasible), the Child Development Expert gave 90% (Very Feasible) and Practitioner Expert of 91% (Very Feasible). (2) The fine motor skills of Nurul Hidayah Kindergarten students increased compared to before using the motor story media (CERMOT) as seen from the results of the Pre-Test and Post-Test, the average Pre-Test value was 54.9 and the Post-Test value was 88.2, which means there is a difference between learning before and after using the Motor Story media (CERMOT).

Keywords: *Early Childhood, Motor Stories, Fine Motor Skills*

Corresponding author
Name: Mila Wahyuni
Email: milawahyuni280398@gmail.com

INTRODUCTION

Early Childhood Education (ECE) is a crucial foundation for building children's character, social skills, as well as cognitive and motor development in a holistic manner. Early childhood, known as the golden age, is a critical period in a child's growth and development. At this stage, the brain develops rapidly, and the learning experiences provided have a significant impact on the formation of the child's cognitive, emotional, and physical structures (Shonkoff & Phillips, 2000).

One important aspect that must be developed from an early age is motor skills, particularly fine motor skills, which involve the small muscles of the hands and fingers. These skills play an essential role in children's daily activities such as writing, drawing,

cutting, buttoning clothes, and so on (Siahaan, 2021) . If not properly stimulated, the development of fine motor skills may be delayed, affecting children's academic and social skills in later stages of education (Kalmansur et al., 2023).

However, based on initial observations at TK Nurul Hidayah Purwakarta, it was found that children's fine motor skills were still relatively low. Children appeared to have difficulty holding writing tools properly, cutting, threading beads, and pasting. The classroom learning activities were more focused on cognitive aspects, while fine motor development had not yet become a main focus. Additionally, the learning media used were not yet capable of optimally and enjoyably stimulating children's motor movements.

In response to these challenges, **motor story-based learning media** offers a strategic alternative to address the problem. Motor stories are learning media that combine educational narratives with motor activities suited to the child's developmental stage. This media allows children to learn through a multisensory approach involving visual, auditory, and kinesthetic elements. In practice, children follow the storyline while performing specific movements, such as pasting pictures, tracing lines, assembling puzzles, matching objects, or counting items. This not only trains hand-eye coordination but also enhances imagination, concentration, and active participation in learning activities (Lestari, 2020).

Previous studies have shown that various media have been used to improve early childhood fine motor skills. Yuliasari et al. (2020) developed a busy board that effectively stimulated motor skills through exploration and manipulation. STKIP Modern Ngawi et al. (2019) designed a writing path maze media based on the Borg & Gall model, which was considered practical and enjoyable. Wahyuni et al. (2018) examined the effectiveness of cooking class activities, which significantly improved children's fine motor skills. Moreover, nature-based media such as cassava leaf collage by Sofiani et al. (2020) showed positive results in developing finger and hand skills.

However, there has been limited research that specifically focuses on the development of **motor story media** as a systematic effort to enhance fine motor skills. In fact, story-based media has great potential because it provides meaningful context for children to complete tasks. Stories facilitate emotional engagement, improve retention, and guide children's activities according to the narrative. In the context of the *Merdeka Curriculum* (Permendikbudristek No. 12 of 2024), project-based, play-based, and participatory approaches such as motor stories align well with the principles of early childhood education, which emphasize flexibility and the development of essential competencies. This narrative approach has been proven to increase children's engagement, support concentration, and provide meaningful learning contexts Neina (2019). Moreover, motor stories allow children to engage in multisensory learning that integrates visualization, hearing, and physical movement—making it highly compatible with the learning characteristics of young children (Saqinah & Yuliantina, 2024).

Through this integrated and enjoyable approach, motor stories not only improve fine motor skills but also contribute to the development of children's social, emotional, and language abilities. In its implementation, children can participate in activities such as pasting, drawing, tracing, matching, counting objects, assembling puzzles, or imitating

movements in accordance with the story, while simultaneously training hand-eye coordination and fine muscle control.

Therefore, this study aims to develop a learning medium called **Motor Stories (CERMOT)** as an innovative alternative to improve the fine motor skills of children aged 4–6 years. CERMOT is designed not only to enhance fine motor abilities but also to support the integrated development of children's cognitive, social, and emotional skills. Through the development of CERMOT media, it is expected that children will gain active, enjoyable, and meaningful learning experiences. Additionally, teachers and parents will have a practical and appropriate tool to support children's learning both at home and at school. This research serves as an initial step in creating innovative and adaptive learning media to holistically support children's growth and development.

METHODOLOGY

This study employed a Research and Development (R&D) approach, referring to the ADDIE model, which consists of five main stages: Analysis, Design, Development, Implementation, and Evaluation. This model was chosen because it aligns with the needs for systematically developing educational products based on user requirements.

The research was conducted at TK Nurul Hidayah, Purwakarta, involving children aged 4–6 years in Group B as the research subjects. A total of 10 children participated in the product trial, selected based on the consideration that they were already at a developmental stage where fine motor skills could be further stimulated through educational media. Additionally, the researcher involved four validators in the validation process: an early childhood education (ECE) content expert, an educational media expert, a child development expert, and a practitioner (kindergarten teacher).

The research procedure followed the stages of the ADDIE model, as follows:

1. **Analysis**
   The researcher conducted observations and interviews with teachers to identify learning needs and issues related to the development of children's fine motor skills. The analysis revealed that children needed an engaging, narrative-based medium capable of stimulating fine motor muscles in a fun way.
2. **Design**
   Based on the analysis results, the researcher designed the Motor Story (CERMOT) media, consisting of an interactive picture book featuring motor activities such as pasting, drawing, tracing, and assembling puzzles. The media design was adapted to the characteristics of early childhood learners and referred to developmental achievement goals outlined in the Merdeka Curriculum (Permendikbudristek No. 12 of 2024).
3. **Development**
   At this stage, the researcher developed a prototype of the motor story media. The product was then validated by experts using validation sheets that covered aspects such as content feasibility, media appearance, developmental appropriateness, and

usability within an ECE learning context. The validation results were used to revise and optimize the product.

4. **Implementation**
   The revised media was implemented during classroom learning activities. Children's activities while using the media were observed and recorded, and their fine motor skills were assessed using an observation checklist.
5. **Evaluation**
   Evaluation was carried out by comparing the children's fine motor skill outcomes before and after using the media (pre-test and post-test), along with teacher reflections on the practicality of the media's use.

Data were collected using several instruments, namely: (1) an observation sheet for assessing children's fine motor skills (pre-test and post-test), (2) validation sheets completed by content, media, practitioner, and child development experts, (3) interview guidelines for classroom teachers, and (4) documentation of children's activities during learning sessions. The validation process assessed the content, design, and implementation aspects of the media. Data were analyzed using both quantitative descriptive and qualitative methods. Pre-test and post-test scores were compared to measure the effectiveness of the media.

FINDING

This study aims to develop a learning medium called *Motor Stories* (CERMOT) as a means to improve fine motor skills in early childhood, particularly for children aged 4–6 years at Nurul Hidayah Kindergarten, Purwakarta. The development followed the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation.

The needs analysis was carried out through observation and interviews with teachers and students. It was found that children aged 4–6 years had difficulties performing fine motor activities such as threading, drawing, writing, and cutting. Meanwhile, teachers expressed the need for interactive teaching media that align with children's developmental characteristics. Results from 10 respondents showed that 5 children were in the *Beginning to Develop* category, 3 were *Developing as Expected*, and the rest were still in the *Not Yet Developed* category.

Table 1 Validation Results of Motor Story Media (CERMOT)

NO	Type Of Validator	Assessed Aspects	Feasibility Score	Category
1.	Subject Matter Expert	Content relevance, learning objectives, and material accuracy	88%	Highly Feasible
2.	Media Expert	Visual design, clarity, and interactivity	89%	Highly Feasible

3.	Child Development Expert	Appropriateness with the stages of children's motor development	90%	Highly Feasible
4.	Practitioner (Kindergarten Teacher)	Ease of use, suitability with children's characteristics	91%	Highly Feasible

The validation results indicated that the media had high quality in terms of content, design, usability, and material relevance.

A small group trial was conducted with 10 children. The respondents showed significant improvement in hand-eye coordination and fine motor skills. Activities such as tracing patterns, assembling puzzles, drawing, and pasting pictures were performed better after using CERMOT. The following are the results of the Pre-Test and Post-Test conducted at Nurul Hidayah Kindergarten:

Table 2 Pre-Test and Post-Test Results

No	Name	Pre-test Score	Post Test Score
1	AL	60	89
2	AZ	60	89
3	GH	61	92
4	KH	61	92
5	HA	69	96
6	MI	54	87
7	BA	32	70
8	ZA	58	89
9	FA	47	89
10	DE	47	89
Total		549	882
Average		54,9	88,2

There was an increase in the average score from 54.9 (Pre-Test) to 88.2 (Post-Test), indicating a significant improvement in children's fine motor skills after using the CERMOT media. This suggests that the media is not only feasible but also practical and effective to use.

DISCUSSION

The research findings indicate that "Cerita Motorik" (CERMOT) is an effective learning medium for enhancing young children's fine motor skills. Stories combined with hands-on activities successfully stimulate hand-eye coordination, finger strength,

concentration, and creativity. This aligns with fine motor development theories that emphasize the importance of direct and repeated experiences in shaping small muscle skills.

CERMOT also aligns with constructivist learning principles, where children actively construct knowledge through physical activities and narratives. Validations from various experts confirmed that CERMOT is appropriately designed for early childhood, contains educational content, is safe to use, and promotes active engagement. It also supports the multisensory approach recommended in early childhood education by involving children's visual, tactile, and auditory senses.

One of the strengths of this medium is its flexibility for use both at school and at home, while also positively influencing children's self-confidence, independence, and academic readiness. However, the trial also revealed that some activities still require adjustments in terms of difficulty level and supporting tools—for instance, replacing markers with higher-quality ones to ensure comfort in use. The increase in post-test scores indicates that the medium has a significant impact on children's abilities. Moreover, it is user-friendly, visually appealing, and encourages learning through play, in line with the principles of early childhood education and the Merdeka Curriculum.

Overall, the Cerita Motorik (CERMOT) medium is theoretically and empirically proven to be feasible for use in fine motor learning for early childhood. These findings are expected to contribute to the development of more innovative and enjoyable learning media in early childhood education settings.

CONCLUSION

Based on the research findings, it can be concluded that the development of the motoric story media (CERMOT) is an appropriate and innovative solution for improving fine motor skills in early childhood. The needs analysis revealed an urgent need for interactive, enjoyable, and developmentally appropriate learning media that can stimulate hand-eye coordination, finger strength, and movement accuracy in children.

Validation results from subject matter experts, media experts, and education practitioners indicate that CERMOT is highly feasible and practical for use in early childhood learning activities. This medium successfully enhanced children's fine motor skills significantly, as demonstrated by the increase in the average score from a pre-test score of 54.9 to a post-test score of 88.2. Therefore, CERMOT can be recommended as an effective, engaging, and relevant learning tool for both teachers and parents to support children's optimal development.

REFERENCE

Kalmansur, B. C. P., Susanti, E., & Yonatia, J. (2023). *Buku Cerita Interaktif Sebagai Medium Keterampilan Motorik Halus Anak*. *09*.

Lestari, E. D. (2020). *Seni Tari Dalam Meningkatkan Kemampuan Motorik Kasar Anak Usia Dini Usia 5-6 Tahun*.

Neina, Q. A. (2019). Dongeng Abad 21: Modernisasi Sastra Anak Berbasis Psikologi Perkembangan. *Jurnal Sastra Indonesia*, *7*(3), 202–211. https://doi.org/10.15294/jsi.v7i3.29846

Saqinah, F., & Yuliantina, I. (2024). Pengaruh Pembelajaran Berbasis Projek dengan Buku Aktifitas Interaktif terhadap Kemampuan Literasi dan Numerasi. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *7*(12), 14281–14287. https://doi.org/10.54371/jiip.v7i12.6495

Shonkoff, J. P., & Phillips, D. A. (Eds.). (2000). From neurons to neighborhoods: The science of early childhood development. *From Neurons to Neighborhoods: The Science of Early Childhood Development.*, xviii, 588–xviii, 588.

Siahaan, L. H. (2021). *Meningkatkan Motorik Halus Anak Usia Dini Melalui Kegiatan Bermain dengan Media Barang Bekas di TK Atika Thohir Falak*. *5*.

Sofiani, S., Casta, casta, & Suzana. (2020). *Jurnal Prodi Pendidikan Islam Anak Usia Dini Hadlonah: Jurnal Pendidikan dan Pengasuhan Anak AUD*.

STKIP Modern Ngawi, Munawaroh, A. U., Wijayanti, A., & STKIP Modern Ngawi. (2019). Pengembangan Media Maze Alur Tulis pada Perkembangan Motorik Halus. *Jurnal Pendidikan Modern*, *5*(1), 12–21. https://doi.org/10.37471/jpm.v5i1.63

Wahyuni, S., Efastri, S. M., & Fadillah, S. (2018). Meningkatkan Kemampuan Motorik Halus melalui Kegiatan Cooking Class Anak Usia 5-6 Tahun di TK Melati Pekanbaru. *PAUD Lectura: Jurnal Pendidikan Anak Usia Dini*, *2*(01), 61–72. https://doi.org/10.31849/paudlectura.v2i01.2005

Yuliasari, N., Sumarni, S., & Rukiyah, R. (2020). Pengembangan Alat Permainan Edukatif Busy Board Untuk Motorik Halus Anak Kelompok A Di Taman Kanak-Kanak. *Tumbuh Kembang: Kajian Teori dan Pembelajaran PAUD*, *7*(1), 87–96. https://doi.org/10.36706/jtk.v7i1.11552