



Enhancing Fine Motor Skills in Children Aged 4–5 Years through Progressive Scissor-Cutting Activities

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Abstract

Fine motor skills are one aspect of development that needs to be stimulated from an early age because they play a crucial role in supporting hand-eye coordination and a child's readiness to enter the next level of education. Preliminary observations at the Assalam Islamic Early Childhood Education indicated that the fine motor skills of 4-5-year-old children were still underdeveloped, particularly in cutting activities. This study aimed to improve children's fine motor skills through cutting activities using paper. The study employed the Classroom Action Research method based on the Kemmis and McTaggart model, which includes the stages of planning, implementation, observation, and reflection. The research subjects consisted of 14 children in Group A, aged 4–5 years, at the Assalam Islamic Early Childhood Education. The study was conducted in two cycles: Cycle I focused on introducing the use of scissors and practicing cutting basic shapes, while Cycle II focused on practicing cutting geometric shapes. Data were collected through observation, performance assessment, and documentation, and were then analyzed using descriptive quantitative and qualitative methods. The results of the study show that children's fine motor skills improved, as indicated by a decrease in the percentage of children in the "Not Yet Developed" category from 32% to 21% and an increase in the percentage of children in the "Developing Well" category from 17% to 31%. These findings suggest that paper-cutting activities conducted in stages are effective in improving the fine motor skills of 4–5-year old children.

Abstrak

Kemampuan motorik halus merupakan salah satu aspek perkembangan yang perlu distimulasi sejak usia dini karena berperan penting dalam mendukung koordinasi mata dan tangan serta kesiapan anak memasuki jenjang pendidikan berikutnya. Hasil observasi awal di PAUD Islam Assalam menunjukkan bahwa kemampuan motorik halus anak usia 4–5 tahun masih rendah, khususnya dalam kegiatan menggunting. Penelitian ini bertujuan untuk meningkatkan kemampuan motorik halus anak melalui kegiatan menggunting menggunakan media kertas. Penelitian menggunakan metode Penelitian Tindakan Kelas (PTK) dengan model Kemmis dan McTaggart yang meliputi tahap perencanaan, pelaksanaan tindakan, observasi, dan refleksi. Subjek penelitian terdiri atas 14 anak kelompok A usia 4–5 tahun di PAUD Islam Assalam. Penelitian dilaksanakan dalam dua siklus, yaitu pengenalan penggunaan gunting dan latihan menggunting pola dasar pada siklus I serta latihan menggunting pola geometri pada siklus II. Data dikumpulkan melalui observasi, penilaian unjuk kerja, dan dokumentasi, kemudian dianalisis secara deskriptif kuantitatif dan kualitatif. Hasil penelitian menunjukkan bahwa kemampuan motorik halus anak mengalami peningkatan yang ditandai dengan penurunan persentase kategori Belum Berkembang (BB) dari 32% menjadi 21% serta peningkatan

Kata Kunci: *Kegiatan Menggunting bertahap; Kemampuan Motorik Halus; Penelitian Tindakan Kelas.*

kategori Berkembang dengan Baik (BSB) dari 17% menjadi 31%. Temuan ini menunjukkan bahwa kegiatan menggunting menggunakan media kertas yang dilaksanakan secara bertahap efektif meningkatkan kemampuan motorik halus anak usia 4–5 tahun.

INTRODUCTION

Early childhood education is the cornerstone of building high-quality human resources, as this is the period during which children undergo rapid growth and development across all aspects of their development. One aspect that receives significant attention is physical motor development, particularly fine motor skills. Fine motor skills refer to the ability to coordinate small muscles especially the fingers, wrists and hand-eye coordination—to perform various manipulative activities, such as drawing, writing, beading, folding, fastening clothes and cutting. The development of these skills not only influences children's physical abilities but also forms the foundation for cognitive development, school readiness, early literacy skills, and children's independence in daily life (Cameron et al., 2012; Jylänki et al., 2022; Suggate et al., 2019).

Although fine motor development plays a vital role, various studies indicate that many pre-school children have not yet reached the level of fine motor development expected for their age group. Poor visual-motor coordination causes children to experience difficulties in carrying out activities that require precision and accuracy of movement, such as using writing implements, cutting out shapes, or performing other manipulative tasks. This situation can affect a child's readiness to enter primary education, as fine motor skills contribute to early literacy development, pre-writing skills, and subsequent academic achievement (Cameron et al., 2012; Suggate et al., 2019).

Similar issues were also identified in Group A at the Assalam Islamic Early Childhood Education Centre. Based on the results of initial observations, the fine motor skills of children aged 4–5 years were still in the low category. Of the 14 children who were the subjects of the study, only three were able to cut independently according to the given pattern, whilst the majority of children still struggled to hold the scissors correctly, follow straight or curved lines, and complete the cutting activity without the teacher's assistance. Furthermore, during the learning process, it was found that some children lacked focus when following the teacher's instructions and still required intensive supervision whilst carrying out cutting activities. This situation indicates that the fine motor stimulation provided has not yet been fully effective in optimally developing hand-eye coordination.

It is important to address this issue promptly, given that the ages of 4–5 years represent the 'golden age' for the development of children's motor skills. During this age range, rapid development occurs in the neuromuscular system, making it easier for children to respond to stimulation related to hand-eye coordination. Various studies have shown that fine motor stimulation, when provided in a planned and consistent manner, can improve hand movement accuracy, finger muscle strength, visual-motor coordination, concentration, and children's readiness to develop writing skills at subsequent stages of education (Faber et

al., 2024; Józsa et al., 2023). Therefore, teachers need to provide learning activities that are not only engaging for children but also offer hands-on experiences in developing fine motor coordination in line with the developmental characteristics of young children.

One activity considered effective in stimulating fine motor development is cutting with paper. Cutting involves the coordination of various motor skills, ranging from hand grip strength, finger flexibility, bilateral coordination and movement control to the ability to follow patterns visually. As well as practising manipulative skills, cutting also helps children develop their ability to concentrate, solve simple problems, and boost their self-confidence when they successfully complete a given task. Therefore, cutting is one of the recommended activities in early years education as a form of fine motor stimulation that is both en Previous research has shown that cutting activities make a positive contribution to the fine motor development of young children. A study by (Widayati et al., 2019) demonstrated that the systematic implementation of cutting stages was able to improve the fine motor skills of children in Group A at nursery school, raising their performance from the ‘developing as expected’ category to ‘developing very well’. This study confirms that providing cutting exercises in stages helps children develop hand-eye coordination more effectively.joyable and meaningful (Tarmidi & Bakar, 2022).

Previous research has shown that cutting activities make a positive contribution to the fine motor development of young children. A study by (Widayati et al., 2019) demonstrated that the systematic implementation of cutting stages was able to improve the fine motor skills of children in Group A at nursery school, raising their performance from the ‘developing as expected’ category to ‘developing very well’. This study confirms that providing cutting exercises in stages helps children develop hand-eye coordination more effectively.

Furthermore, research by (Damaling et al., 2024), found that cutting activities had a significant effect on improving the fine motor skills of children in Group B at nursery school. Through cutting activities carried out in stages, the children demonstrated improvements in their ability to hold scissors, follow patterns, and control their hand movements more precisely than before the intervention. These findings indicate that cutting activities are an effective form of motor stimulation for improving manipulative skills in young children.

Another study was conducted by (Gaoiran et al., 2025), who developed a cutting kit as a tool for practising cutting skills among pre-school children. The results of the study showed that the gradual use of the cutting kit was able to improve children’s scissor skills, visual-motor coordination, and the precision of their movements when following various cutting patterns. The study demonstrated that variation in learning materials is one of the key factors in enhancing the effectiveness of fine motor stimulation in children.

In addition to this research, (Józsa et al., 2023) explain that fine motor development is influenced by children’s opportunities to engage in repetitive and progressive manipulative activities. Children who gain learning experiences through activities involving hand-eye

coordination demonstrate better motor skill development than those who receive limited stimulation. These findings are supported by (Faber et al., 2024), who state that the development of fine motor skills in children aged 3–6 years occurs gradually in line with the increasing complexity of the activities provided. Therefore, systematically designed learning is a key factor in optimising children’s fine motor development.

Although various studies have demonstrated the effectiveness of cutting activities in improving fine motor skills, the results of the literature review indicate that there are still several research gaps. Most previous studies have employed experimental or quasi-experimental designs focusing on the effect of the intervention on children’s learning outcomes, whilst research using the Classroom Action Research approach to describe the process of learning improvement remains relatively limited. Furthermore, most studies have been conducted on children in Group B aged 5–6 years, whilst studies on the gradual implementation of cutting activities for children in Group A aged 4–5 years have not yet been widely reported. Previous research has also placed greater emphasis on the final outcome of improved motor skills without detailing the process of learning reflection in each action cycle as the basis for learning improvement.

Given this gap, the novelty of this study lies in the implementation of cutting activities carried out in stages, beginning with an introduction to the use of scissors, cutting straight lines and curved lines, and progressing to geometric patterns, using a Classroom Action Research approach with children aged 4–5 years at the Assalam Islamic Early Childhood Education Centre. This study not only focuses on improving children’s learning outcomes but also describes the process of refining the learning process in each cycle, thereby producing a more systematic and reflective learning strategy that can serve as an alternative for early years teachers in developing children’s fine motor skills.

Based on the above, the aim of this study is to analyse the improvement in the fine motor skills of 4–5-year-old children through cutting activities using paper at the Assalam Islamic Early Childhood Education Centre, and to describe the process of learning improvement carried out in each cycle of the Classroom Action Research.

RESEARCH METHOD

This study employed a Classroom Action Research approach based on the Kemmis and McTaggart model, which comprises four stages: planning, acting, observing, and reflecting. The research was conducted at Assalam Islamic Early Childhood Education Centre with 14 children in Group A, aged 4–5 years, who were found to have low fine motor skills based on the results of the initial observation. The study was carried out in two cycles, with each cycle comprising five sessions. In Cycle I, the intervention focused on introducing the use of scissors and practising cutting out simple shapes, whilst Cycle II served as a follow-up to the reflections from Cycle I through the repetition of basic exercises and activities involving cutting out geometric shapes to improve the children’s hand-eye coordination.

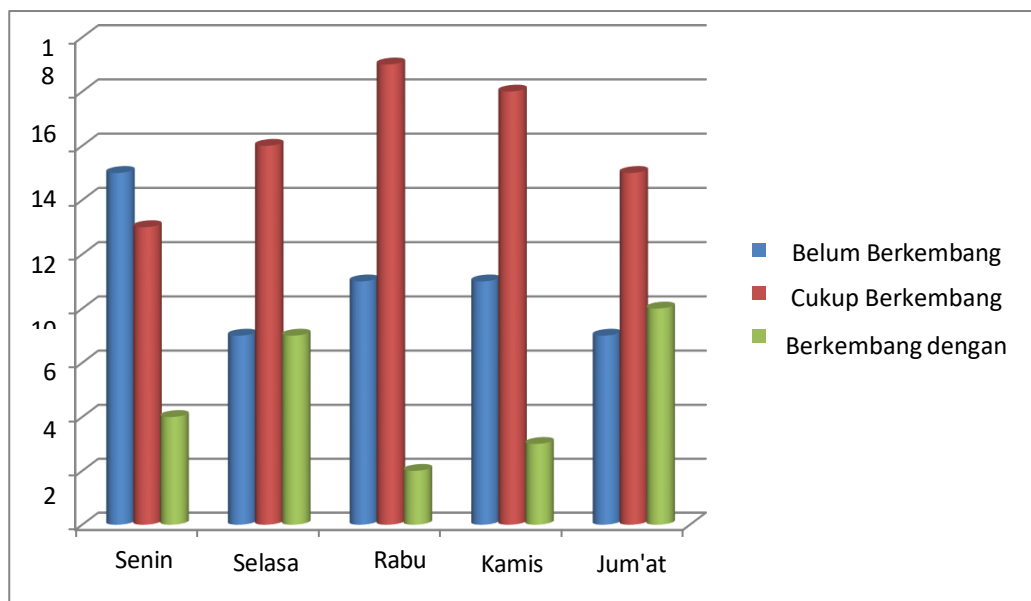
Research data were collected through observation, performance assessment and documentation. The research instruments comprised an observation sheet for teacher activities, an observation sheet for children's fine motor development, and an assessment rubric for cutting skills, all of which were based on the Child Development Achievement Standards. The data were analysed using quantitative descriptive methods, employing percentages to determine improvements in fine motor skills across each cycle, as well as qualitative descriptive methods to describe changes in children's learning behaviour during the intervention. The indicators of research success were defined based on the increase in the number of children achieving the 'Developing as Expected' and 'Developing Very Well' categories, and the decrease in the number of children in the 'Not Yet Developing' category across each cycle.

RESEARCH RESULTS AND DISCUSSION

Improving Fine Motor Skills through an Introduction to the Use of Scissors and Practising Cutting Out Basic Shapes

The initial stage of the activity focused on introducing the use of scissors and practising cutting out basic shapes, as a means of stimulating the development of fine motor skills in children aged 4–5 years. The learning activities began with a demonstration of the correct way to hold scissors, an explanation of their function and safe use, and exercises to improve hand-eye coordination through cutting simple patterns, including straight lines, right-angled diagonal lines, left-angled diagonal lines and curved lines. The sequence of these stages is based on the principle of scaffolding, which involves providing learning experiences that progress from a low level of difficulty to a more complex level, enabling children to develop optimal visual-motor coordination. The results of observations during Cycle I indicate that the interventions implemented are beginning to have an impact on the children's fine motor skills development, although the improvement is not yet optimal. Based on the assessment results, 32 per cent of the children were in the "Not Yet Developed" category, 51 per cent were in the "Moderately Developed" category, whilst 17 per cent had reached the "Well Developed" category. These findings indicate that the majority of the children are still at the adaptation stage in using scissors and therefore require more intensive practice to improve hand-eye coordination.

Figure A.1 Figure Title



Source: Research data

Qualitatively, during the implementation of the interventions in Cycle I, various obstacles were still identified that affected the children's fine motor skill development. Some children were not yet able to hold the scissors in the correct position, experienced difficulty opening and closing the scissors in a coordinated manner, and were unable to control the direction of the scissors to keep them following the provided pattern lines. Furthermore, coordination between the dominant hand operating the scissors and the non-dominant hand, which serves to hold and guide the paper, had not yet developed optimally; consequently, the cut-outs often strayed from the pattern lines. These findings indicate that the children's manipulative skills were still at an early stage of development and required stimulation that was gradual, consistent and repetitive. This is consistent with the findings of (Flatters et al., 2014), who stated that object manipulation skills are greatly influenced by the integration of postural stability, visual-motor coordination, and hand movement control. Children who are not yet able to coordinate these three aspects tend to experience difficulties in completing tasks that require precision of movement, such as cutting along a pattern. Furthermore, (Zwicker et al., 2017) explain that limitations in motor coordination in children not only result in poor performance of manipulative activities, but may also reduce children's self-confidence and participation in learning activities. These findings are also supported by (Józsa et al., 2023), who emphasise that the development of fine motor skills occurs gradually through activities involving visual-motor coordination, finger control, and the repeated manipulation of tools within a structured learning environment. Therefore, the cutting activities carried out in stages in this study serve as an appropriate form of stimulation to improve bilateral coordination, precision of movement, and manipulative control in young children, enabling them to perform cutting activities more effectively in the subsequent cycle.

The results of this study indicate that familiarisation with the use of scissors is a crucial stage before children undertake more complex cutting activities. Mastering how to hold the scissors, finger positioning, and the coordination of opening and closing the scissors form the basis for the subsequent development of fine motor skills. (Cameron et al., 2012) explain that fine motor development occurs through a process of repeated practice involving coordination between the visual and neuromuscular systems and finger movement control. Manipulative experiences provided in a gradual manner will strengthen the connection between visual perception and motor movements, enabling children to perform activities requiring precision more effectively. These research findings are also supported by (Sanenek et al., 2023), who state that children's fine motor development is influenced by systematic, continuous stimulation appropriate to their developmental stage, enabling visual-motor coordination and motor accuracy to develop optimally. Furthermore, (Noor, 2023) emphasises that manipulative activities carried out in stages such as holding tools, coordinating hand movements, and using various learning materials contribute to the improvement of fine motor skills and children's readiness to engage in subsequent learning activities. Thus, the results from Cycle I indicate that the process of adapting to the use of scissors is beginning to take shape, although the majority of children have not yet reached the 'developing well' category.

These findings are also consistent with motor development theory, which states that manipulative skills develop gradually in line with neurological maturity and the opportunities children have to receive stimulation. (Faber et al., 2024) explain that children aged 3-6 years experience progressive development in the quality of their hand movements when engaged in activities that require visual-motor coordination. In the early stages, children generally still struggle to control the direction of their movements, maintain a steady grip, and coordinate the movements of both hands when manipulating an object. This was evident in this study, in which the majority of children still required the teacher's assistance to guide the scissors along both straight and curved lines. These findings are also supported by (Fitriyah et al., 2021), who explain that fine motor development is optimised when children receive stimulation through manipulative activities that are designed systematically, progressively, and in line with their developmental characteristics, thereby fostering better eye-hand coordination. Furthermore, (Nurjanah & Muthmainah, 2023) explain that manipulative activities involving the use of various learning materials can improve hand-eye coordination, finger movement control, and precision in performing fine motor tasks. Therefore, the teacher's assistance provided during the initial stages of using scissors in this study constitutes a form of scaffolding that is necessary until the children are able to coordinate their movements independently.

As well as being influenced by biological development, success in cutting activities is also influenced by the quality of teaching provided by the teacher. (Janke van der et al., 2020), through a systematic review of various motor interventions for pre-school children, concluded that fine motor activities yield optimal results when carried out gradually, repeatedly, and tailored to the child's developmental level. Activities that are too complex

at an early stage can actually cause frustration, thereby reducing the child's motivation to learn. These findings are reinforced by (Winata, 2023), who explains that children's fine motor development is greatly influenced by the intensity of stimulation provided by teachers and parents. A lack of opportunities to engage in manipulative activities causes children to experience difficulties in controlling hand movements; therefore, structured and continuous learning is required to optimise fine motor development. Furthermore, (Motimona & Maryatun, 2023) explain that teachers play a crucial role in selecting forms of stimulation appropriate to children's developmental characteristics, so that learning activities can enhance fine motor skills effectively and sustainably. Therefore, the use of basic patterns in Cycle I is an appropriate strategy as a foundation before children are introduced to more complex patterns in subsequent cycles.

The results of this study reinforce the findings of (Widayati et al., 2019), who reported that learning to cut through stages of basic patterns can improve the fine motor skills of young children. That study showed that practising cutting straight, diagonal and curved lines helps children to gradually develop hand-eye coordination before cutting geometric shapes. The similarity of these results indicates that structuring learning stages from simple to complex patterns is an effective strategy for developing manipulative skills in young children. These findings are also supported by (Azizah & Abd Jabar, 2023), who state that the use of demonstration methods and the provision of examples in a step-by-step manner can improve children's fine motor skills, as it helps them understand the sequence of movements before practising independently. Furthermore, (Wirdalena & Mayar, 2022) explain that the provision of teaching materials and learning activities systematically organised from a low level of difficulty to a higher level has been proven effective in stimulating the fine motor development of young children. Therefore, the organisation of learning stages for cutting, progressing from basic patterns to more complex ones in this study, is a strategy consistent with the principles of motor development and the learning characteristics of young children.

The findings of this study are also consistent with the research by (Damaling et al., 2024), which states that cutting is one of the activities effective in improving fine motor skills as it involves visual-motor coordination, finger muscle strength, hand movement control, and precision in following patterns. However, this improvement does not occur instantly; rather, it requires repeated practice so that children can gradually master the technique of cutting. Therefore, the results from Cycle I, which showed a predominance of the 'Fairly Developed' category, can be understood as the initial phase of fine motor skill development before children achieve a more optimal level of ability.

Research by (Gaoiran et al., 2025) on the use of cutting kits with pre-school children also showed that gradual scissor-cutting practice can improve children's scissor-handling skills and visual-motor coordination. The researchers explained that this improvement in ability occurs because children are given the opportunity to repeat the same movements consistently, thereby developing better motor control. These findings are also supported by (Oktafiani & Rakimahwati, 2023), who state that providing manipulative activities in a

gradual and repetitive manner can improve eye-hand coordination and the precision of finger movements in young children. Furthermore, (Wulan & Watini, 2023) explain that providing fine motor stimulation through varied and sustained activities can improve hand-eye coordination, finger movement control, and children's independence in completing manipulative tasks. These findings reinforce the results of this study, which indicate that although the children's abilities in Cycle I were not yet optimal, the process of familiarising them with the use of scissors and practising basic patterns provided a learning experience that served as a crucial foundation for the improvement of fine motor skills in the subsequent cycle.

As well as improving hand-eye coordination, cutting activities also contribute to children's readiness to develop pre-writing skills. (Tarmidi & Bakar, 2022) explain that cutting skills are positively correlated with the ability to control writing implements, as both activities involve visual-motor coordination, wrist stability and control of finger movements. Therefore, the cutting exercises provided in Cycle I are not only intended to improve children's ability to use scissors, but also to build the foundational skills they will need when they begin to learn to write.

Based on the results of observation and reflection, the still-low level of fine motor skills achieved in Cycle I was influenced by several factors, namely the children's lack of experience in using scissors, hand-eye coordination that had not yet developed optimally, low concentration levels during learning, and the children's still-limited ability to follow instructions independently. Therefore, in Cycle II, improvements were made to the teaching approach through more systematic demonstrations, individual support, repetition of basic exercises, and the gradual introduction of geometric patterns. It is hoped that these improvements will enhance visual-motor coordination and result in more optimal development of fine motor skills compared to the previous cycle.

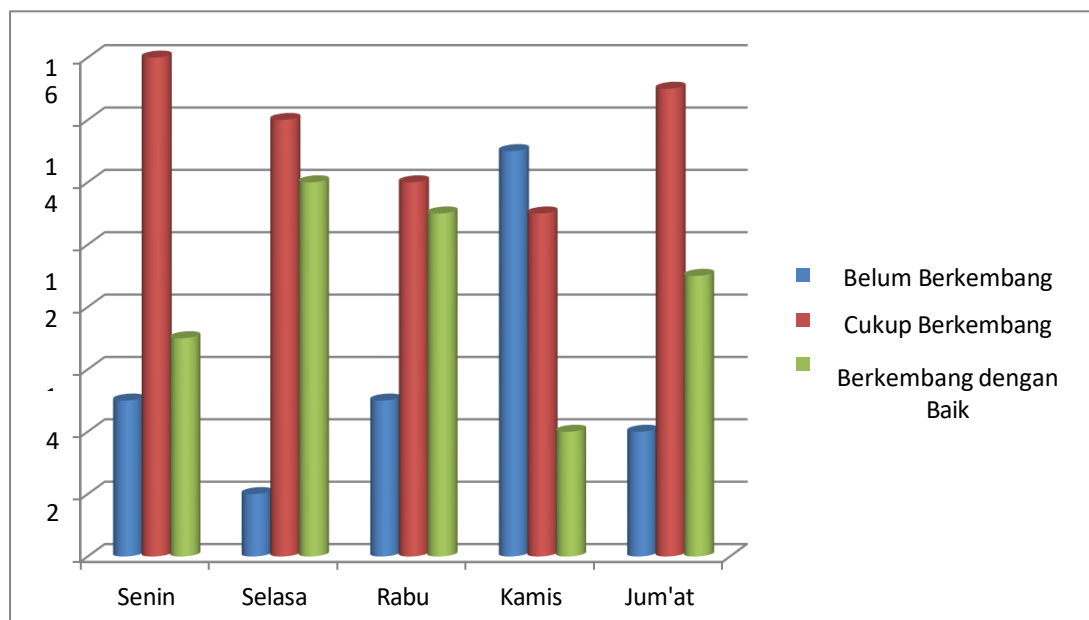
Improving Fine Motor Skills through Practising Cutting Out Geometric Shapes

The initial stage of the activity focused on introducing the use of scissors and practising cutting out basic shapes, as a means of stimulating the development of fine motor skills in children aged 4–5 years. The learning activities began with a demonstration of the correct way to hold scissors, an explanation of their function and safe use, and hand-eye coordination exercises through cutting simple patterns, including straight lines, right-angled diagonal lines, left-angled diagonal lines and curved lines. The sequence of these stages is based on the principle of scaffolding, which involves providing learning experiences that progress from a low level of difficulty to a more complex level, enabling children to develop optimal visual-motor coordination.

Based on the results of the observations, the children's fine motor skills showed an improvement compared with Cycle I. The assessment results indicated that the percentage of children in the "Not Yet Developed" category fell from 32 per cent to 21 per cent, the "Moderately Developed" category saw a slight decrease from 51 per cent to 48 per cent, whilst the "Well-Developed" category rose from 17 per cent to 31 per cent. The 14-

percentage-point increase in the ‘Well Developed’ category indicates that the remedial measures implemented in Cycle II had a positive impact on the children’s fine motor skills development.

Figure A.2 Figure Title



Source: Research data

The results of the observations also revealed changes in the children’s learning behaviour whilst taking part in the cutting activities. The majority of the children began to hold the scissors more steadily, move them in a more controlled manner to follow the patterns, and coordinate the movements of their dominant and non-dominant hands more effectively. The children appeared more confident in completing the cutting tasks without the teacher’s assistance and were able to maintain their concentration throughout the activity. Nevertheless, there were still some children who experienced difficulties when cutting out circular and triangular patterns, as these two shapes require more complex visual-motor coordination than straight-line patterns.

The improvement in fine motor skills in Cycle II indicates that exercises carried out in stages provide children with the opportunity to develop manipulative skills through repetition. Motor learning theory explains that motor skills develop through consistent practice, leading to increasingly automatic movement coordination. The more frequently children engage in manipulative activities, the better the neuromuscular system’s ability to control precise movements (Schmidt & Lee, 2020). In this study, the repetition of basic exercises prior to cutting out geometric shapes helped children develop hand movement control, thereby better preparing them to tackle tasks of a higher level of difficulty.

The findings of this study are consistent with those of (Gaoiran et al., 2025), who reported that the gradual use of a cutting kit significantly improved the cutting skills of pre-school children. That study showed that children who received repeated practice with varying

patterns exhibited improvements in eye-hand coordination, grip stability and accuracy in following patterns. These similar findings suggest that the principle of progressive learning is an effective strategy for developing fine motor skills in young children.

The results of this study also support the research by (Damaling et al., 2024), which found that cutting activities have a significant impact on the fine motor development of nursery school children. Scissor-cutting activities train the intrinsic muscles of the hand, improve finger control, and strengthen visual-motor coordination, thereby enabling children to perform other manipulative activities more effectively. In this study, the increase in the 'developing well' category from 17 per cent to 31 per cent indicates that practising cutting geometric patterns can accelerate the development of these skills.

Furthermore, research by (Tarmidi & Bakar, 2022) shows that scissor-cutting skills are closely linked to the development of pre-writing skills. Children who are able to control the direction of the scissors accurately generally have better wrist control and finger coordination, making them better prepared for writing activities. Consequently, the improvement in scissor-handling skills during Cycle II not only indicates the development of fine motor skills but also has positive implications for children's academic readiness at the next stage of education.

Research by (Faber et al., 2024) explains that the development of fine motor skills in pre-school-aged children is demonstrated not only by improvements in final outcomes but also by changes in the quality of movement. Children who initially used stiff movements gradually became capable of producing more efficient, stable and coordinated movements. This phenomenon was observed in this study, in which children began to be able to manoeuvre the scissors more smoothly, maintain the position of the paper, and follow geometric shapes with a higher degree of precision compared to Cycle I.

The findings of this study also corroborate the results of the systematic review by (Janke van der et al., 2020), which states that motor interventions carried out repeatedly and tailored to the child's developmental stage have a greater impact than learning that takes place only occasionally. Repeating activities enables children to strengthen their motor memory, thereby improving their coordination of movement. This explains why the improvement in fine motor skills observed in this study only became clearly evident after corrective measures were implemented in Cycle II.

Although there was an improvement in fine motor skills, the research results indicate that 21 per cent of children still fell into the "Not Yet Developed" category. This suggests that the development of fine motor skills proceeds at different rates for each child. Factors such as neurological maturity, prior learning experiences, motivation, family support and the intensity of practice all influence the success of fine motor stimulation. Therefore, teachers need to provide individualised instruction, offer a variety of learning materials and provide ongoing practice opportunities so that all children receive learning experiences tailored to their needs.

Overall, the results of Cycle II indicate that introducing activities involving cutting out

geometric shapes once children have mastered basic shapes is more effective in improving their fine motor skills. A step-by-step learning programme from introducing the use of scissors, through basic pattern practice, to geometric patterns has been shown to provide a systematic learning experience, enabling children to develop hand-eye coordination, finger control, precision and independence in carrying out manipulative activities. These findings reinforce the view that a step-by-step learning approach (scaffolded motor learning) is an effective strategy for developing fine motor skills in young children.

Improvements in Children's Fine Motor Skills Across Cycles and Implications for Learning

The research findings indicate that the implementation of cutting activities using paper, carried out in stages, was able to improve the fine motor skills of 4–5-year-old children at the Assalam Islamic Early Childhood Education Centre. This improvement is evident from the increase in the percentage of children achieving the “Developing Well” category, rising from 17 per cent in Cycle I to 31 per cent in Cycle II, whilst the percentage of children in the “Not Yet Developing” category fell from 32 per cent to 21 per cent. Although the improvement achieved does not yet indicate that all children have optimally met the success indicators, these results demonstrate a positive change following the implementation of systematic improvements to teaching practices in each cycle.

Table A.1 Title Table

No	Category	Cycle I	Cycle II
1	Not Yet Developed	32%	21%
2	Fairly Well-Developed	51%	48%
3	Developing Well	17%	31%

Source: Research's data

This improvement indicates that structuring cutting activities in stages beginning with an introduction to the use of scissors, practising cutting basic shapes, and progressing to cutting geometric shapes provides a learning experience suited to the developmental characteristics of young children. These learning stages enable children to develop their motor skills progressively, starting with the mastery of simple movements and moving towards more complex skills. This process is in line with the concept of scaffolding, which emphasises the provision of gradual support until learners are able to perform tasks independently. In the context of this study, teacher demonstrations, individual guidance and repeated practice served as forms of scaffolding that helped children develop visual-motor coordination and hand movement control more effectively.

From the perspective of motor development theory, the improvement in the children's abilities during Cycle II indicates that fine motor skills develop through repetitive practice and meaningful manipulative experiences. The activity of cutting not only involves the strength of the small muscles in the fingers, but also requires the integration of visual perception, bilateral coordination, wrist stability, and precise movement control. The more often children are given the opportunity to perform this activity, the better the

neuromuscular system becomes at controlling directed and efficient movements. Thus, the success of the tasks in this study was not solely due to the use of paper as a medium, but also to the gradual and continuous practice process.

The findings of this study reinforce the results of the research by (Cameron et al., 2012), which indicate that fine motor skills make a significant contribution to children's readiness for learning, particularly in the development of pre-writing skills and executive functions. Similarly, (Faber et al., 2024) emphasise that improvements in the quality of hand movements in pre-school children occur when children are given the opportunity to engage in manipulative activities appropriate to their developmental level. In this study, changes in the children's behaviour were evident in their improved ability to hold scissors correctly, follow pattern lines more accurately, and complete tasks more independently compared to the first cycle.

The findings of this study are also consistent with the research by (Damaling et al., 2024; Gaoiran et al., 2025; Tarmidi & Bakar, 2022; Widayati et al., 2019), which concluded that cutting activities are an effective form of stimulation for developing fine motor skills in early childhood. These consistent findings indicate that the success of cutting activities is influenced not only by the materials used but also by the teaching strategies employed by teachers, particularly in structuring learning stages from a low level of difficulty towards more complex levels. Consequently, systematic learning centred on children's developmental needs is a key factor in optimising the development of fine motor skills.

Nevertheless, this study also shows that there are still some children who have not reached the 'developing well' category by the end of Cycle II. This suggests that each child's fine motor development proceeds at their own pace and is influenced by various factors, such as neurological maturity, prior learning experiences, motivation, family support, and the intensity of stimulation received at school and at home. Therefore, teachers need to provide more adaptive learning support through individualised guidance, a variety of learning materials, and more intensive practice opportunities for children who are still experiencing difficulties.

In practical terms, the findings of this study suggest that cutting activities can be used as an alternative learning strategy to develop fine motor skills in early childhood. Early years teachers are advised to design cutting activities in stages, starting with an introduction to the use of scissors, practising basic patterns, and progressing to more complex patterns, whilst taking into account the developmental characteristics of each child. In addition to improving hand-eye coordination, these activities also have the potential to support the development of concentration, attention to detail, independence, and children's readiness to enter the writing stage in the next level of education.

CONCLUSION

This study shows that the implementation of cutting activities using paper as a medium is able to improve the fine motor skills of 4–5-year-old children at the Assalam Islamic Early Childhood Education Centre through a step-by-step learning process. This improvement

is evident from the increase in the percentage of children achieving the “Developing Well” category, from 17 per cent in Cycle I to 31 per cent in Cycle II, accompanied by a decrease in the “Not Yet Developing” category from 32 per cent to 21 per cent. These results indicate that introducing the use of scissors, followed by systematic practice in cutting out basic and geometric shapes, is effective in developing hand-eye coordination, improving finger control, and enhancing children’s precision when carrying out cutting activities. Thus, the research objective of improving children’s fine motor skills through cutting activities using paper has been achieved.

The findings of this study suggest that cutting activities can serve as an effective alternative learning strategy for stimulating the fine motor development of young children, provided they are designed in a step-by-step, child-centred manner and tailored to their developmental levels. However, this study remains limited by a relatively small sample size and the implementation of the intervention across only two cycles; consequently, the findings cannot yet be widely generalised. Therefore, further research is recommended to develop variations in manipulative materials, extend the duration of the intervention, or involve a more diverse group of participants in order to obtain a more comprehensive picture of the effectiveness of cutting activities in developing the fine motor skills of young children.

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