

## ORIGINAL ARTICLE

# Assessing the usability of a Motor Skills Module to Enhance Independent Self-Care Skills in Preschool Children: A Cognitive Interview Approach

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## ABSTRACT

**Background:** Good motor skills development is crucial for preschool children, as it significantly enhances their ability to perform self-care tasks independently. However, a gap exists in targeted educational modules that integrate motor skills training into daily routines, creating a need for resources that build children's confidence and independence in self-care activities. **Objective:** This study evaluates the usability of a motor skills module designed to promote self-care independence in children. **Method:** Two parents and two teachers were selected based on their experience with children aged 3-4 years. Over two weeks, they utilised the module with the children. Cognitive interviews were conducted to evaluate module usability, covering aspects such as readability, size, fonts, cover images, and content, as well as identifying unclear terms or chapters needing revision. Data collection involved conducting in-depth cognitive interviews following this period to gather detailed feedback on the module's usability. **Results:** The module was well-received overall, with participants praising its comprehensiveness in covering necessary motor skills for self-care. However, certain features such as the small font size, fragile book structure, and overly bright colours were seen as hindrances to readability and usability. Complex sentence structures and formatting issues were also identified as barriers to understanding. **Conclusion:** The findings suggest that the motor skills module is a valuable tool for fostering self-care independence in preschool children, though minor refinements are needed. Future research should explore the long-term impacts and scalability of the module, as well as its effectiveness among preschool children.

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## INTRODUCTION

Children diagnosed with neurodevelopmental disorders such as Autism (1), Down Syndrome (2), Cerebral Palsy (3) and Developmental Coordination Disorder (DCD) (4) are often the primary focus of studies on motor skills development and self-care independence due to their pronounced difficulties in these areas. While children diagnosed with disabilities often struggle with motor skills and self-care, typical children also face challenges in these areas that are often overlooked. Contrary to common assumptions, research shows that motor skills must be intentionally practised early to ensure proper

development in all children (5,6).

The National Health and Morbidity Survey found that 7.4% of children under five years old experience developmental delays, meaning many struggle to reach age-appropriate milestones (7). This rate includes typical children without genetic or severe medical conditions and points to delays in motor skills, language, cognition, and social-emotional development. This figure generally encompasses typical children without known genetic or severe medical conditions. Still, it identifies delays in critical areas of development such as motor skills, language, cognition, and social-emotional abilities. Additionally, typical preschool children can experience substantial delays in mastering both locomotor skills (ranging from 5 to 8 months) and object control skills (ranging from 10 to 19 months) (8). Children also may exhibit differences in the pace at which they acquire

various developmental skills, a phenomenon that can be influenced by familial patterns (e.g. family history skill delays) or environmental factors (e.g. not attending preschool) (9). This finding underscores the importance of addressing motor skills development universally, rather than exclusively focusing on children with diagnosed conditions.

Based on the Occupational Therapy Practice Framework (OTPF) (10), Motor skills involve small, observable actions used to move oneself or interact with tangible objects, such as tools, utensils, clothing, and digital devices, during relevant daily tasks. Motor skills are typically divided into gross and fine motor abilities (11). Gross motor skills include running, jumping, and throwing, while fine motor skills require smaller movements between the fingers, hands, and feet for actions such as picking up and grasping small objects (12). The OTPF is relevant to this study because it provides a comprehensive approach to developing self-care skills through targeted motor skills stimulation, making it more beneficial to apply this framework to support skill acquisition in preschool children. Moreover, motor and self-care skills are essential components of a child's development and are a primary focus in occupational therapy. Developing these skills is crucial for a child's independence, which directly contributes to school readiness and boosts self-esteem (13). By enhancing motor and self-care abilities, occupational therapy helps children prepare for academic and social challenges, fostering confidence and a sense of competence in their daily lives. Furthermore, a study found that motor skills were reported to contribute to poorer performance in activities of daily living (14)

The acquisition of self-care skills typically starts at preschool age and progresses as gross motor, fine motor, cognitive, and social-emotional skills develop during the early years of life (15). A study found that as children's motor skills improved, their self-care abilities also increased among typical preschool children (16). Develop Self-care independence (skills to dress and undress, toilet skills, eating and feeding, bathe, and wash) directly relates to motor skill improvement, as it enhances motor skills (5). Motor skills and self-care independence are considered separate areas in terms of developmental milestones, but they work together in a child's development, as their effects are interconnected (5).

According to "Mountain of motor development" the model provides a framework for motor skills which describes that development takes years and requires specific experiences and instruction (6). The development of a child's motor skills over time is driven by adaptation and learning, which need to be nurtured, promoted, and practiced, not mere maturation (6). Additionally, cultural variations in child-rearing practices can influence the ages at which motor skills develop (17). Based on this

model, there are fundamental motor pattern periods for children between one to seven years. By developing gross and fine motor skills during this period, children build the foundation needed for independence in daily activities and successful participation in culturally valued activities like sports and games (6). This period highlights the interconnectedness of motor development and self-care skills, emphasizing the importance of nurturing these abilities from an early age.

Designing a motor skills module is essential for assisting teachers and parents in teaching and guiding their children. Appropriate exposure to motor skills development and self-care independence can be introduced at an early age. While several modules have been developed for specific conditions such as Dyslexia (18), Autism (19), and special needs (20) and for typical preschool children focusing on specific areas like hand hygiene (21), emotional and social relationships (22), play (23), general early childhood development (24), self-values (25), and, emotional intelligence (26), there is a notable gap. Standard modules used by public kindergartens, such as PERMATA's module (27,28) and KEMAS kindergarten's module (29), do cover self-care skills. While several modules target children with specific conditions or focus on limited areas of early childhood development, there is a lack of comprehensive modules addressing both motor skills and self-care independence from an occupational therapy perspective. Developing a motor skills module for self-care aligns with the role of occupational therapy in promoting functional independence in young children's daily routines. OT in early intervention uniquely supports children's development of essential life skills, including self-care, motor, and social-emotional skills, through evidence-based practices (30).

This module may also help counter the cultural misconception that motor skills simply mature on their own, emphasizing the need to actively address and correct this belief. Therefore, this study aims to examine the usability of a motor skills module designed to enhance self-care independence in preschool children.

## METHODOLOGY

A qualitative study was conducted using cognitive interviewing to obtain feedback from participants, following the probing approach outlined by Beatty & Willis (31,32). This approach to transcription allowed us to assess the module's usability by focusing on each item as the unit of analysis, enabling a thorough review of data for all 63 items and identifying links between problematic items and specific parent or child characteristics (33). The verbal probing technique involves asking targeted questions to understand participants' thought processes, rather than merely recording their spontaneous responses (32). The qualitative feedback was intended to inform potential minor modifications to the module, including

changes to its instructions, printed size, font size, color, and other elements, while ensuring the fidelity of the original content (34).

A purposive sampling method was employed to recruit participants for this study. This method was suitable because it ensured that participants met the specific inclusion criteria necessary to provide relevant feedback. The study involved a total of four participants: two parents and two teachers. Additionally, the module was used with four preschool children aged 3-4 years. The preschool years are crucial for developing motor skills that are learned and refined through practice over time(35). The inclusion criteria for parents required them 1)to have typical children aged 3-4 years 2)be able to speak and 3)understand Malay, and be Malaysian citizens. For teachers, the criteria included 1)the ability to comprehend instructions in Malay, 2)being full-time teachers at the chosen school, and 3)working with children aged 3-4 years. The exclusion criteria for parents and teachers were similar, excluding those with physical disabilities such as being deaf, blind, or mute, and those with physical impairments that limited their ability to perform certain motor tasks. Non-Malaysian citizens were also excluded.

The study was conducted at a kindergarten, in Kuala Selangor, Malaysia. Ethics approval was granted by the [UKM PPI/111/8/JEP-2021-490). This study also has been approved by Government and Private kindergarten [Reference number: (KEMAS. BPAK 629-02/01/01 Jld 21 (37)]. The data collection procedure involved several key steps. The established DDR approach was used in developing this motor skills module, incorporating activity analysis and educational components, resulting in a comprehensive module that complements those currently in use. To enhance self-care independence among preschool children, a motor skills module named "I-Independent: Buku Panduan untuk Guru dan Ibu Bapa bagi Kanak-Kanak Tipikal: Modul Kemahiran Motor untuk Meningkatkan Penjagaan Diri Secara Berdikari" was developed. The module was created in Malay to align with the national language of Malaysia, which most Malaysians can speak and understand. Utilizing the Design and Development Research (DDR) approach (36) the module establishes an empirical basis for its creation and development. An important component of the module is activity analysis, which assesses whether children can perform motor skills and self-care tasks safely and independently and evaluates the physical effort and efficiency demonstrated in these activities(37). Furthermore, the module includes two educational components that emphasise the roles of teachers and parents (38), as each provides unique, complementary support essential for children's skill development. Teachers contribute structured, consistent practice within a learning environment, while parents reinforce these skills at home, offering support in familiar settings. Together, these components outline

the specific skills and competencies children need to achieve desired outcomes and apply evidence-based strategies such as modelling, shaping, prompting, and extrinsic reinforcement to ensure skill acquisition and retention across educational and home environments.

The motor skills module, "I-Independent: Buku Panduan untuk Guru dan Ibu Bapa bagi Kanak-Kanak Tipikal: Modul Kemahiran Motor untuk Meningkatkan Penjagaan Diri Secara Berdikari" was printed in A5 size with loop wire binder. The module is divided into two parts: (1) Reading, references and knowledge and (2) skills, activities and strategies. All 63 items (including two parts and seven domains) were included in the module. Seven domains: Eating and feeding skills, Oral hygiene, Dressing skills, Toileting, Ablution and prayer, Hygiene and grooming, and Methodize (manage routine). This module went through panel experts and obtained content validity index scores for the module's components ranged impressively from 0.99 to 1, with an overall scale content validity index of 0.99 across 63 items. Each selected teacher and parent received one file containing the printed motor skills module, an information sheet, and informed consent. Parents and teachers must agree and sign the information sheet before proceeding to the session.

Initially, participants attended an introductory session where they were provided with an overview of the motor skills module and the study's objectives. During this session, the module was distributed to participants along with instructions on using it over the two weeks. A brief training session was also conducted to guide participants in engaging with the module and focusing on specific aspects during the usability study. Over two weeks, participants were asked to use the module with the children, concentrating on one selected chapter. They were encouraged to note any immediate reactions, difficulties, or observations during module use. Interviews were conducted individually with each participant following the two-week module usage period. The researcher also asked a few questions related to the motor skills module, including: 1) How do you understand the content of the motor skills module? 2) What do you think about this module applying to children? 3) Does the module require any improvement?. The cognitive interview focused on participants' interpretation of items rather than their responses to avoid participant burden. This model of probing involves proactive, searching probes. The probes are standardised in construction, with a key component being anticipated probes(31). Anticipated probes are those that are scripted or at least roughly configured based on the expectation of potential issues with the question (31). The researcher also read each item to parents and teachers, who were then asked to state their understanding and interpretation of each item. All interviews were tape-recorded to ensure accuracy and facilitate detailed analysis. Using an audio recorder was crucial for safely recording and retaining

all information (33). The researcher used data from the interview to identify any issue related to the motor skills module, including readability, size of the printed module, colours used, font size, and any other problem related to the module that arose as shared by participants. Data was analysed through processes that included transcription of interview data, summarisation of parents' and teachers' interpretations of items and identification of types of problems, analysis of item summaries, and decision-making about items in the motor skills module (33). The researcher used Spreadsheet Excel and NVivo software to code, organise, and store the data (39).

## RESULTS

Four participants were involved in the cognitive interviewing session as shown in Table I: two parents (a father with three children and a mother with four children) and two teachers with 6 and 12 years of experience, respectively, in taking care of preschool children at a private kindergarten.

**Table I: Demographic characteristic**

Participants(N=4)	Age	Total children (for parents only)	Working experience (for teachers only) (years)
Mr R (father)	37	3	-
Mrs N(mother)	36	4	-
Teacher F	25	-	5 years
Teacher Z	31	-	12 years

### Summarizing interviews

The purpose of the descriptive summary was to facilitate a comparison of parents' and teachers' perspectives on the module's usability for each item. The following excerpts provide examples of four participants' interpretations of some parts of the book.

Parents (father): "I am okay with the size of the book, but the font size is too small for some people to read, especially older individuals or those with vision problems. Additionally, I am quite afraid to turn from one page to another because of the loop wire binding. I would prefer spine book binding like common books on the market."

Teachers: "It is difficult to read and takes time because the font size is too small and the text is dense".

Parent (mother) : "As a mother of four kids, I need everything to move faster, and a larger sized book works well for me. It makes it easier for me to read and understand the content. Some people may prefer a novel-sized book (A5), but not me. I believe I need a larger size to read together with my kids."

Researcher: The A5 size of the printed book makes the font size smaller, and the loop wire binding makes it difficult for readers to read clearly and turn pages smoothly.

On the other hand, there is also positive feedback from parents and teachers who shared that they can see how

the module differs from the usual books they have seen before. For example:

Parent: "I love this module because it is very comprehensive and easy to use for teaching children about motor skills and self-care independence. This book is especially suitable for parents with their first child, as it provides detailed explanations for each step of self-care skills. It is like a dictionary with pictures—if you are unclear about any steps, you can refer to the provided illustrations for clarification".

Parent: " Yes, this book helps me answer my questions related to my child's development and self-care independence. Even though I have four kids, there are always things I need confirmation on. My kids enjoy doing tasks in the module with me and have shown some improvements in performing these tasks in their daily lives."

Teacher Z: "I have seen a lot of guideline modules during my 12 years working as a preschool teacher. There were times I had to take exams based on these guideline modules. I think this module is much better because it is less formal has lots of pictures for every step and comprehensively covers the specific skills we need to teach children".

Teacher F: "There is always something new to learn each day. For instance, I wasn't sure how to help children brush their teeth. However, when I looked at the techniques in this module, it helped me understand how to guide them. It provides clear steps for every self-care and motor skills task mentioned in the module".

Participants' feedback was noted in the summary. Researchers point to the importance of assessing problems specific to a given measure (31). Thus, the researcher and team developed a coding scheme that reflected problems specific to the motor skills "I-Independent: Buku Panduan untuk Guru dan Ibu Bapa bagi Kanak-Kanak Tipikal: Modul Kemahiran Motor untuk Meningkatkan Penjagaan Diri Secara Berdikari" items.

### Identification of problems

Comparison of the various difficulties participants noted as they gave their interpretations of an item identified five categories of problems with our items: (a) small and fragile printed book size; (b) overly bright colours; (c) small font size; (d) complex sentences; and (e) issues with formatting and neatness. Table II defines and gives an example of each type of problem.

### Parents commented that the colors used on the cover of the module are overly bright and distracting

For example from parent (father): "The colour of the cover page and some parts of this module, especially within the boxes, is too bright. It strains my eyes when

**Table II: Type of problem reflected in Motor skills module (I-Independent)**

Problem type	Definition	Example input
Small size and fragile printed book	Comments noting the module printed in A5 and using loop wire binder	It is difficult to turn from one page to another, type of paper too thin and there is a concern that the module may tear.
Overly bright colours	Comments noting some parts of the module not using the correct and appropriate for an adult used	Parents and teachers feel distracted by the bright colors used on the cover page and in some parts of the module.
Font size small	Comment noting size of font use too small	It is difficult to read the content, especially the words in bubble shapes.
Complex sentence	Some sentences are too long and complex to understand	Parents and teachers found some sentences difficult to understand and had to read them repeatedly.
Formatting and neatness	The arrangement of boxes and the alignment between pictures and the sentences explaining them need improvement to make the content more organized and coherent.	Some of the boxes, picture and sentences should be rearranged to make the content more organized and neater.

I'm reading the content of this module."

Another example from a teacher: "I would prefer pastel colours, as I think this book is used for both parents and teachers. It would be better to choose less bright colours."

Parents and teachers also commented that the small font sizes make it difficult for them to read and understand some sentences, especially the font in the bubble shapes labeled "Tahukah Anda" in the motor skills module.

For example: "The font is so small that it is very difficult for me to read. It takes me a lot of time to read each sentence repeatedly".

This feedback helps the researcher enhance the module by increasing the font size, making it easier to read and more user-friendly. Teachers also commented that some items in the module contain complex sentences that are difficult to understand.

For example: "I have difficulty with some items because the sentences are too complex. For example, in the part about brushing teeth, it is unclear which step to move the brush".

This feedback helps the researcher identify other items in the module that require improvement. It is important to have sentences that are easy to understand, as teachers and parents will use this module one-on-one with the children and may find it difficult to ask for help if they do not understand the items. Parents and teachers commented on issues with formatting and neatness.

For example: "The arrangement of boxes in the content needs improvement because some sections look messy."

Another example: "As for me, I feel overwhelmed by the crooked box shapes. It might be better to use a normal shape style"

### Analysis of item summaries

Once guidelines for summarizing the data from the cognitive interviews had been finalized, the work of

completing a summary for each of the 63 items was shared by the researcher to other team members. Table III provides an excerpt from the template that was used to summarize parents' and teachers' interpretations of each item as well as their feedback on the types of problems identified. Based on the interpretation, the module received positive feedback from all participants, who mentioned that it is comprehensive and covers all required items for motor skills and self-care independence. As shown here, a parent's and teacher's response may or may not identify a problem type. Usually, not more than two types of problems were contained in a particular response to a particular item. Thus, the matrix displays included some blank areas, indicating that a particular type of problem was not identified by a particular parent or teacher. The item-level data summary facilitated the next step—analysis of parents' and teachers' interpretations of items and identification of specific item problems.

The researchers also compared parents' and teachers' feedback on item problems, noting both the types of issues identified and how frequently they were mentioned. The final analysis of each item offered a concise overview of the range of interpretations, and the nature and extent of the problems, and supported for evaluation of the quality of each item, aiding in decisions to retain, delete, or modify items.

### Decision-making

The final steps involved reviewing each item's analysis and deciding whether the item should be retained, deleted, or modified as shown in Table IV.

### Retention of Items:

Sixty-three items were retained without modification. Across the 63 retained items, no parents stated that any item needed to be omitted. In addition to giving consistent interpretations of the retained items, parents noted only minimal problems with complex sentences, colours used, font sizes, and formatting, though they did offer some suggestions for possible changes such as using a better module binder and larger printed size for the module. These items were retained, but parents' and teachers' feedback was useful in determining the

**Table III: Summary of data from two parents and two teachers for the overall's motor skills module**

Parents' and teachers' Interpretation of Motor skills module				
	1	2	3	4
	Mr R	Mrs N	Teacher F	Teacher Z
	"I am quite afraid to turn from one page to another because of the loop wire binding. I would prefer spine book binding like common books on the market."	"Some people may prefer a novel-sized book (A5), but not me. I believe I need a larger size to read together with my kids."	"As for me, I feel overwhelmed by the crooked box shapes. It might be better to use a normal shape style"  "I have difficulty with some items because the sentences are too complex. For example, in the part about brushing teeth, it is unclear which step to move the brush".	"I would prefer pastel colours, as I think this book is used for both parents and teachers. It would be better to choose less bright colours."
Interpretation	Size of book and type of binder used	Size of the book	Small book and font size	Colours are too bright and distracting
Problem type	Small size and fragile printed book size			
	Small size of book and loop wire binder make it difficult to turn page			
		Readable font size		Would prefer less bright colours
	Overly bright colours			
	Small font size			
	Complex sentences		Sentence too long and complex	
	Issues with formatting and neatness.		The shape and position styles require some adjustments	

**Table IV: Analysis of Cognitive Interview Data from the overall's motor skills module**

Items	Interpretations	Problem type	Decision
Difficult to read and worrying to turn from one page to another page	Printed size book and easily tear	Small size and fragile printed book size	Change the size of the printed book from A5 to A4, use a book binder, and use thicker quality paper
It strains my eyes when I read the content of this module.	Colours not suitable	Overly bright colours	Change to pastel colours
Need to read repeatedly for some sentence	The micro-sized type is not user-friendly	Small font size	Improve font size
"Analisis aktiviti bab 2 : Pembersihan mulut	Sentence too long and complex	Complex sentence	Revised:
Langkah 8 : Memberus permukaan gigitan di gigi iaitu bahagian atas, bawah dan tengah mulut dengan memberus secara ke atas ke bawah atau ke depan ke belakang sekurang – kurangnya 30 saat"			"Memberus permukaan gigitan di gigi iaitu bahagian atas, bawah dan tengah mulut sekurang – kurangnya 30 saat"
Feel overwhelmed by the crooked box shapes	Shapes that are tilted or angled	Issues with formatting and neatness.	Some shapes are retained, but others are rearranged to enhance neatness and organization

eventual ordering of items.

**Deletion of items**

Based on the cognitive interview analysis, no deletion of items is needed for this module. All the items have been retained as they thoroughly cover the required motor skills and self-care independence areas.

**Revision of items**

However, some items have been revised and adjusted appropriately to meet the needs of parents and teachers, enhancing the usability of the module for the study. There are some complex sentence changes to simple sentences to enhance the readability of the module. For example :

Original sentence: "Analisis aktiviti bab 2 : Pembersihan mulut [Langkah 8 : Memberus permukaan gigitan di gigi iaitu bahagian atas, bawah dan tengah mulut dengan memberus secara ke atas ke bawah atau ke depan ke belakang sekurang – kurangnya 30 saat ."]

New sentence: ["Memberus permukaan gigitan di gigi iaitu bahagian atas, bawah dan tengah mulut sekurang – kurangnya 30 saat"]

Based on feedback from parents and teachers about the difficulty in reading and concerns about tearing when turning pages, the researcher and team decided to change the size of the printed book from A5 to A4, use a bookbinder, and use thicker quality paper. Parents and teachers also commented that the bright colors used on the cover and some parts of the content strain their eyes when reading the module. Therefore, the researcher and team decided to change the colors to pastels, such as dark pink to light pink, dark green to light green, and ocean blue to light blue. There were also comments from teachers who needed to read some sentences repeatedly due to the small font size, especially in certain sections of the module. To address this issue, the researcher decided to increase the font size. Additionally, increasing the overall size of the printed module may indirectly help improve font size readability for the readers. A teacher

and a father commented that they felt overwhelmed by the crooked box shapes and suggested improvements to make the module more organized. Overall, the module features a nice layout and is well-organized, making it easy to follow and understand. However, while some shapes are retained, others are rearranged to improve neatness and organization.

## DISCUSSION

This study successfully evaluated the usability of the "I-Independent: Buku Panduan untuk Guru dan Ibu Bapa bagi Kanak-Kanak Tipikal: Modul Kemahiran Motor untuk Meningkatkan Penjagaan Diri Secara Berdikari" module for preschool children through cognitive interviewing. The motor skills module has been evaluated psychometrically in earlier studies (see Method), but a qualitative cognitive pretesting was also an important step in the development and evaluation of the instruments to understand their usability in practice (40). The results show that parents and teachers provided positive feedback, with some comments related to five key areas: (a) small and fragile printed book size; (b) overly bright colors; (c) small font size; (d) complex sentences; and (e) issues with formatting and neatness. The researcher and team members decided to make adjustments and improvements according to the comments to obtain the usability of the module among preschool children.

Parents and teachers provided positive feedback, stating that the module covers all the necessary areas. They also mentioned that this module is like a "dictionary with pictures," which helps them understand the content clearly without confusion. This demonstrates that the module is practical for usability. Using this module could help parents and teachers increase their knowledge and teach their children more efficiently and effectively. Ultimately, the children would improve their motor skills and achieve self-care independence earlier. For example, similar to how parents educated in toilet training significantly enhanced their children's adaptive behaviors and independence in performing toilet activities (41), this module equips parents and teachers with tools to foster children's motor skill development, ultimately promoting earlier self-care independence.

The module also received feedback identifying five key areas of improvement, prompting the researcher to make amendments to ensure usability for users (parents and teachers). Using probing techniques in cognitive interviewing helped identify poorly worded or ambiguous items in the module (33,42). In addition to identifying specific threats to parents' ability to comprehend the use of the motor skills module, the cognitive interviews provided useful insights into whether they would be willing to use the module and work with their children (43). This insight was gathered through specific responses and observed trends in parents' and teachers' feedback.

Most comments on problematic aspects, such as the colours and small printed size module, were linked to parents' and teachers' concerns that they would either not be willing to use the module or would not be truthful in their feedback regarding the module. It is crucial to identify problems specific to a given instrument so that the researcher can pinpoint the exact sources of problematic aspects in related modules(33). By using cognitive interviews with thorough analyses, researchers can identify which items are susceptible to certain problems and develop items that avoid these potential issues(33). Furthermore, most comments indicated that parents and teachers had a holistic experience using the module and expressed a desire for improvements so that they can use it in the future. This shows that the motor skills module is practical for use among parents and teachers to teach children about motor skills and achieve self-care independence.

This study highlights the potential of targeted teaching and stimulating motor skills to support the developmental needs of young children, fostering greater independence and self-efficacy in their daily lives. Self-care skills serve as foundations for many school-related tasks and essential life skills. When self-care skills are lacking, children may struggle with independence and confidence, hindering social participation, school readiness, and adaptation to structured environments(44). These factors influence later academic achievement and overall life success. This is consistent with studies suggesting that parents provide children with appropriate opportunities for modelling and practice to develop age-appropriate self-care abilities during preschool years (45). For instance, guiding children over two years old to wash their hands or dress themselves while allowing them to try independently with supportive guidance fosters these skills(45). These practices connect directly to the usability of the motor skills module, as it is designed to support parents in encouraging hands-on, age-appropriate self-care tasks. Therefore, this module could help teachers and parents teach their children, as its usability has been tested.

A limitation of the study is the small sample size used in cognitive interviewing. There is no uniform sample size for cognitive interviewing (46). However, parents and teachers were purposively selected to reflect a diverse user population, as the module is intended to be used by both teachers and parents.

## CONCLUSION

The iterative feedback and subsequent adjustments underscore the importance of user-centered design in developing the motor skills module. The identified issues, including adjustments to the printed size, font, colour, and content clarity, were addressed, ensuring the module is more accessible and practical for its intended users. By addressing the identified issues, the

"I-Independent: Buku Panduan untuk Guru dan Ibu Bapa bagi Kanak-Kanak Tipikal: Modul Kemahiran Motor untuk Meningkatkan Penjagaan Diri Secara Berdikari module now better meets the needs of parents and teachers, facilitating the development of motor skills and self-care independence in preschool children. The motor skills module underwent all the necessary analysis processes to establish its usability. Finally, early childhood is a critical period for children to acquire self-care independence, which influences school readiness, academic achievement, and overall life success. Future research could further explore the long-term impacts of specific modifications to the motor skills module, such as adjustments to colour schemes, font sizes, and item clarity, as well as their effectiveness in enhancing self-care independence among preschool children. These studies could provide deeper insights into how such refinements support usability and skill acquisition.

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