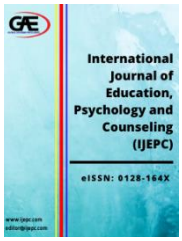
International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 9 Issue 55 (September 2024) PP. 499-515
DOI 10.35631/IJEPC.955033



INTERNATIONAL JOURNAL OF EDUCATION, PSYCHOLOGY AND COUNSELLING (IJEPC)
www.ijepc.com

ENHANCING EARLY BRAILLE INSTRUCTION: A QUALITATIVE NEEDS ANALYSIS FOR MODULE DEVELOPMENT IN PRESCHOOL SPECIAL EDUCATION

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Article Info:

Article history:
Received date: 17.07.2024
Revised date: 31.07.2024
Accepted date: 28.08.2024
Published date: 30.09.2024

To cite this document:

Awang, A., Rani, I. F. A., Idris, Wahap, N. S. M., & Kamil, R. (2024). Enhancing Early Braille Instruction: A Qualitative Needs Analysis For Module Development In Preschool Special Education. *International Journal of Education, Psychology and Counseling*, *9* (55), 499-515.

DOI: 10.35631/IJEPC.955033.

Abstract:

The study examines the need to develop a braille early reading skills module for preschool children with visual needs. Although inclusive education has grown, the challenge still exists in providing adequate support for early braille literacy skills. Teachers in special education frequently face a lack of material and guidance to teach these skills. The study's objective is to identify the need for module construction. The study methodology involved semi-structured interviews with four Malaysian preschool visual education teachers using the McKillip Discrepancy Model. The study revenues indicate major challenges, including a lack of student interest, difficulty understanding instructions, diverse levels of student development, weak fine motor skills, and a lack of reference sources. Teachers use alphabetical and phonic methods, but braille code necessitates a more specific approach. All participants expressed an urgent need for a comprehensive module with features such as user manuals, teaching aids, customizable activities, and a focus on fine motor skills. This study contributes to the specific field of education of vision by providing the basis for the development of the necessary modules, in line with SDG 4 for quality and inclusive education. Future studies propose assessing the effectiveness of modules through experimental or longitudinal studies, as well as the involvement of larger and more diverse samples.

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Keywords:

Braille, Module Development, Needs Analysis, Preschool, Visual Impairment

Introduction

Teaching children to read at a young age is an important part of a child's education since it lays the groundwork for future academic success and personal development. Braille literacy is an essential skill for children who are visually impaired, and it starts with understanding the basics of reading and writing in braille. Children who are visually impaired can benefit much from learning braille as early as possible; it helps with schoolwork, but it can also boost their confidence and independence. Research like this is vital for two reasons: first, it will help us understand why teaching preschool children with visual impairments early braille reading abilities is so crucial, and second, it will help us create a tailored curriculum to meet their unique requirements.

Providing sufficient assistance for these special education needs (SEN), particularly in early braille literacy skills, remains a challenge, despite advancements in inclusive education. When working with children who are visually impaired, special education teachers frequently encounter the problem of insufficient materials and direction for teaching early braille literacy skills (Beyene, Mekonnen & Giannoumis 2023; Van Leendert et al., 2022; Rozniza & Lee 2022). Hannah Aqilah Amran et al. (2019) and Raja Nur Fakhriah Raja Badri Zainal and Aizan Sofia Amin (2018) have conducted research indicating that children with visual impairment face challenges in their scholastic and social outcomes due to a lack of literacy skills. In order to guarantee that all children with visual impairments have an equal chance to thrive academically, it is crucial that researchers tackle these difficulties.

Additionally, this study aligns with SDG 4, which aims to guarantee equitable and high-quality inclusive education and encourage opportunities for lifelong learning for everyone. The development of a teaching module tailored to the needs of visually impaired children learning braille code is a crucial step toward the objective of providing these children with the education they need to become proficient readers and writers in braille (Alya Qasdina Ng Ai Lee & Kway, 2023). Every children should have the chance to reach his or her full potential, and inclusive education is a way to make that happen by supporting individual development while also working toward a societal goal and making that goal more equitable.

A potential solution to these problems is the researcher's investigation into the need for early braille reading skills modules tailored to the preferences and requirements of both visually impaired educators and their children. With any luck, this will help the next module come up with novel approaches to helping visually impaired children learn braille and excel in their early reading endeavors. Attaining this goal will allow the study to make a meaningful contribution to the area of special education for the visually impaired and offer practical advice to educators and policymakers (Salleh & Major Rosmalily, 2023). The aim of this analysis and research on module needs is to understand the necessity of creating a module and identify its essential features. In line with its objectives, this study aimed to address a research issue on the development needs of a module for early braille reading skills in preschool children with visual impairment, in line with the objectives of the study.

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In sum, there are multiple sections to this article. We need to develop an early braille reading skills module, and the first two portions of the study address the introduction and challenges associated with this need. Section 3 details the methods for data collection, participant selection, and study design. Discussion of theoretical, practical, and policy implications follows the presentation of the key results and analysis in the fourth part. Finally, the paper wraps up with a brief overview of the findings and some recommendations for further study. The article's overarching goal is to shed light on the pressing educational need for early braille reading abilities and to offer practical answers to this problem through its thorough analysis.

Research Issues

All children, including those with visual impairments (i.e., those learning braille), benefit greatly from early reading development. Children who are visually impaired learn early reading skills in the same way as typically developing childrens do, but they do it through the medium of braille code. As they grow up, being able to read and write in braille is crucial to their success in school and in social situations (Croake et al., 2024; Hoskin et al., 2024). Furthermore, children who are visually impaired will have access to information, independence, and full participation in society if they learn braille as an early reading skill (Martiniello & Wittich, 2022). Kids who are visually impaired have numerous obstacles on the path to successful braille reading development (Kao & Mzimela, 2019; Kizilaslan, 2020). This research allowed the researcher to examine the primary needs and challenges in creating the early braille reading skills module for visually impaired children.

Insufficient special education materials and detailed instructional protocols provide a significant barrier to meeting the requirements of children with disabilities in the classroom (Shi et al., 2022). The specific learning requirements of these children remain unmet by conventional educational resources (Soumia et al., 2021). Ukpong (2020) states that for early braille literacy, instructors sometimes have to make their own tools due to a shortage of suitable resources for children with visual impairments. Due to a lack of resources and recommendations, the development of early braille literacy, particularly early braille reading skills, necessitates the creation of organized and effectively planned modules.

Also, the ability to deftly use one's fingers and have good fine motor skills is critical for learning braille at a young age. As a result, deciphering braille code by touch necessitates that children with visual impairments have very sensitive fingers and strong fine motor skills (Alya Qasdina Ng Ai Lee & Kway, 2023; Martiniello & Wittich, 2022; Muhammad Nizam Abdul Majid et al., 2022). Still, many visually impaired youngsters encounter this obstacle when trying to improve the development of these abilities (Alya Qasdina Ng Ai Lee et al., 2021). Barlow-Brown et al. (2019) found that problems with tactile discrimination might severely affect SEN's learning and reading efficiency of braille coding. Hence, in order to create effective learning modules for early braille reading skills, it is crucial to intervene early to enhance fine motor skills and finger sensitivity.

Furthermore, prior studies have shown that teaching braille reading to visually impaired children at a young age improves their scholastic performance in the long run (Keil et al., 2017; Martiniello et al., 2022). Combining a multisensory l approach with braille instruction can enhance the benefits of early braille learning for children with visual impairments (Albouys-Perrois et al., 2018; Sophie Chang et al., 2022). Multisensory approaches, which integrate tactile, auditory, and kinesthetic learning methodologies, are helpful in meeting the diverse

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learning demands of children with special needs, according to other studies. According to studies conducted by Siti Zairin and Mohd Norazmi Nordin in 2023 and Komalasari et al. in 2019, multisensory approaches play a significant role in meeting the diverse learning demands of children with special needs. Previous research has shown that children with visual impairments benefit greatly from early intervention that uses a variety of multisensory teaching methods to help them learn braille and improve their educational outcomes in the long run.

But parents and educators also have a significant role to play in helping their children become proficient readers in braille. For children with visual impairments to thrive in school and in life, it is crucial that parents and teachers work together effectively (Muhammad Nizam Abdul Majid et al., 2022). To enable teachers to effectively assist the development of early braille literacy, it is vital that they get professional development and training, as well as suitable resources (Hoskin et al., 2024; Seriayuna Sa'don Zubir, 2019). Consequently, it is crucial for parents and schools to work together to help children with visual impairments develop and improve their early braille literacy abilities.

Ultimately, it takes the combined efforts of many people to overcome this obstacle and create a module teaching preschool children with visual impairments early braille reading abilities. Important considerations include the following: the necessity of early intervention, the responsibility of instructors and parents, the dearth of specialized educational materials, and the necessity of developing fine motor skills. Teachers can help children with special educational needs develop braille reading skills by designing a learning program that is both all-encompassing and tailored to each student's unique needs. According to the findings of this previous study, it is clear that young children with visual impairments require a tailored early braille reading instruction module.

Methodology

Husaini et al. (2015) suggest using a thorough and methodical process known as needs analysis to investigate something's requirements. McKillip (1987) asserts that a group should undertake needs analysis as an assessment stage when confronted with a problem that requires a solution. Needs analysis, as it pertains to this research, is looking into current problems and the necessity of creating instructional modules for early braille reading abilities for visually impaired preschoolers.

The researcher used McKillip's (1987) Discrepancy Model as a guide when conducting interviews for the requirements analysis study. We employ this methodology to identify areas where early braille reading instruction falls short of expectations. This approach also confirms the upcoming module's ability to address the issues. To better meet the requirements and achieve the goals of preschool children with visual impairments, this research will lay the groundwork for a module teaching early braille reading skills, which in turn will aid in strategic planning.

In order to gather information for the requirements analysis phase, the researcher conducted semi-structured interviews with four preschool teachers in Malaysia teaching visually impaired children (KPM, 2022). In the selection of study participants, the researchers used sampling techniques aimed at appropriate to the study. There are no hard and fast guidelines on how many people should participate in a qualitative study (Ghazali Darusalam & Sufean Hussin, 2021), although studies of this type often have a modest sample size (one to seven people).

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Assuming that all of the study participants fulfilled the sampling requirements, the number is adequate (Patton, 2002).

In addition, as stated by Satzinger et al. (2007), a modest sample size is enough when the study's purpose is well-defined. The researcher selected four preschool teachers who teach with children who have visual impairments because they were the only ones who could give reliable information about the challenges and opportunities for improving the preschool curriculum for children with visual impairments in terms of teaching early braille reading skills. An identified subset of the target population will serve as study participants (Richey & Klein, 2007). In Table 1, researchers can see how many people will be participating in the needs analysis.

Table 1: Study Participants for the Needs Analysis Phase

Zone	Number of Study Participants
North Zone	1 person
Eastern Zone	1 person
Borneo zone	1 person
South Zone	1 person
Amount	**4 people**

Research by Nor Anisah Ahmad (2021), Siti Rohana Salleh (2021), and Zulkifli Hussain @ Mat Hassan (2020) suggests that semi-structured interviews are the best tool to use during the needs analysis phase. Prior research has employed semi-structured interviews to find module development needs and issues. For this reason, the researcher has decided to use semi-structured interviews as part of the requirements analysis phase in order to determine whether preschool children who are visually impaired would benefit from a module that teaches them to read in braille.

Previous research also informed the participant selection process, which restricted the module's sample to educators. In the needs analysis phase, researchers Alya Qasdina Ng Ai Lee and Kway (2023), Norhayati Yusoff (2022), and Siti Rohana Salleh (2021) exclusively included instructors as program or module users. The three studies suggest that only with teacher participation can we answer the study questions posed during the needs analysis phase. Since teachers would be the primary users of any newly created program or module, it follows that this study's findings can satisfactorily address the research questions, despite the fact that only teachers are participating. It is critical to understand a program or module's requirements and desired attributes before developing it from the teacher's perspective, as they are the key users.

During this stage of requirements analysis, the researcher used semi-structured interviews to gather information about the development requirements of the early braille reading skills teaching module for preschool visually impaired children. Researchers can benefit from interviewing individuals because it allows them to collect first-hand information of people's ideas, feelings, and experiences, as well as a wealth of information about those things (Stewart et al., 2007). The goal of conducting an interview is to gather information by meeting with an individual or small group in person or through two-way communication to ask them about their thoughts, feelings, and experiences (Ghazali Darusalam & Sufean Hussin, 2021). In qualitative research, this interview method is well-known and utilized (Kamarul Azmi Jasmi, 2012). Since there is a dearth of research on the topic, the researcher has decided to conduct semi-structured

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interviews with preschool teachers who teach with visually impaired children to discover more about the need for creating a module to help these children learn early braille reading skills.

Research Findings

Researchers are employing semi-structured interviews to gather data for the requirements analysis phase. Teachers of visually impaired preschoolers participated in a series of discussions on the necessity of creating a module to teach early braille reading abilities, which was crucial to achieving the study's goals. Appendix A contains the semi-structured interview questions.

The researcher has created interview questions to delve into subjects related to the challenges encountered when teaching preschool children with vision impairments early braille reading abilities. The researcher must address these concerns in order to create a module that helps visually impaired preschoolers learn early braille reading abilities. The researcher will present the results of the requirements analysis thematically during the module development process.

Nor Anisah Ahmad (2021) and Siti Rohana Salleh (2021) used research questions as a qualitative data topic in their study to gather input from participants throughout the analysis phase of module development needs. In light of this, the researcher organizes the study's results into themes that stem from the research questions. This study's four overarching themes emerged from an examination of the interview data:

i. Challenges during the teaching of early braille reading skills
i. Methods of teaching early braille reading skills
iii. The development requirements of the early braille reading skills module
iv. Characteristics of the early braille reading skills module

Challenges During the Teaching of Early Braille Reading Skills

When questioned about the difficulties they faced in teaching early braille reading abilities, teachers had a range of opinions. Here are a few of the difficulties that teachers have while introducing young children to braille reading:

> "Cabaran yang dihadapi oleh saya dalam pengajaran kemahiran bacaan awal ni yang pertamanya minat murid. Minat atau kesediaan murid. Kadang-kadang tu kanak-kanak tu ada yang dia tidak memahami arahan. Kadang-kadang tu, bila kita ajak dia untuk melakukan aktiviti bacaan, dia tidak berminat maksudnya terhadap buku tu. Tidak minat kepada buku. Kadang-kadang mungkin murid tu lebih suka bercerita berbanding menggunakan bentuk fizikal...". (GA)
>
> Translation: The challenge I face in teaching early reading skills is that the children are interested first. Student interest or readiness. Sometimes the child does not understand the instructions. Sometimes, when we invite him to do reading activities, he is not interested in the meaning of the book. Not interested in books. Sometimes maybe the student prefers to tell a story instead of using a physical form.
>
> "… murid ni contohlah kalau yang daftar lima tahun kan. Tahap perkembangan murid tu walaupun dia lima tahun tapi perkembangan dia tu memang rendahlah.

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Perkembangannya macam baru tiga tahun macam itu. Keupayaan dia tu tak sama…" (GB)

Translation: this student is an example if he registered for five years, right? The student's level of development even though he is five years old, but his development is really low. The development is like only three years like that. His abilities are not the same.

"…ada sesetengah murid itu yang cepat untuk tangkap atau mengecam huruf braille. Ada setengah murid itu amat sukar. Mungkin disebabkan masalah *totally blind* menyebabkan mereka sukar untuk mengenal pasti bentuk braille kerana setiap bentuk braille kan berbeza dan kadang-kadang murid tu sukar untuk menyentuh walaupun kita bagi bermacam-macam kaedah pengajaran. Kadang-kadang motor halus mereka tu memang selalu bermasalah. Itulah paling utama selalunya…". (GC)

Translation: there are some children who are quick to catch or recognize braille letters. There are half of the children who are very difficult. Perhaps due to the problem of being totally blind, it is difficult for them to identify the form of braille because each form of braille is different and sometimes it is difficult for the children to touch even though we teach various teaching methods. Sometimes their delicate motors always have problems. That is the most important thing often.

"…Kita tak ada modul, kita tak tahu nak ajar murid buta ini. Saya kena cuba dulu, dan kalau kita rasa pengajaran kita tak betul kita tukar lagi. Kita sentiasa kena *try and error*. Selepas itu. kita kena perbaiki. Kalau ada aktiviti yang kita tak dapat guna dengan murid ni lagi, kita tukar dan tukar lagi. Itu masalah utama, saya tak ada modul atau cara macam mana saya nak ajar murid-murid ini untuk membaca. Untuk mengenal huruf. Tak ada. Memang tak ada sumber rujukan.". (GC)

Translation: We don't have a module, we don't know how to teach these blind children. I have to try it first, and if we think our teaching is not right, we change it again. We always have to try and error. After that. we have to fix it. If there is an activity that we can no longer use with this student, we change it and change it again. That's the main problem, I don't have a module or how I want to teach these children to read. To recognize letters. There is none. There really is no reference source.

"…Masalah anak-anak murid saya, tangan dia tak detect, kurang sensori motor…". (GD)

Translation: The problem with my children is that they don't detect their hands, they lack sensory motor.

Teachers identified several challenges in introducing braille reading to young children. A major issue is the lack of interest and readiness, with children often displaying disinterest in books and reading activities. Barber and Klauda (2020) stress the importance of engagement in effective learning, while Cents-Boonstra et al. (2021) emphasize the role of motivation in reading development. Developmental differences were also noted, with some children showing significantly lower developmental levels compared to their peers, which affects their learning capacity. This is consistent with findings by Rad et al. (2022) and Nicholas et al. (2021) regarding the impact of developmental variations in early childhood education. Furthermore,

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totally blind children often have difficulty differentiating between braille characters due to their reliance on touch. Alya Qasdina Ng Ai Lee and Kway (2023) highlight the importance of tactile discrimination in braille reading. Many visually impaired children also have underdeveloped fine motor skills, which are crucial for reading braille. Bakke et al. (2019) emphasize the need to incorporate fine motor skills exercises in educational programs for visually impaired children. Lastly, teachers reported a significant lack of standardized teaching resources, resulting in a "trial and error" approach. This aligns with the findings of Major Rosmalily Salleh et al. (2023) on the importance of comprehensive materials for effective teaching. These challenges collectively create significant barriers to early braille education, necessitating a comprehensive and innovative approach to improve literacy outcomes for young visually impaired learners.

Methods of Teaching Early Braille Reading Skills

Regarding the approach to teaching early braille reading abilities, three participants in the study identified the Alphabet Method as their preferred method, while one participant mentioned using Phonics Method. The following are some of the ways that teachers have used for introducing preschool children with visual impairments to braille reading:

> "… Kalau kaedah ni macam kalau kita guna zaman-zaman dulu punya kita akan ajar murid, A sampai Z, itu ada juga guna kaedah macam tu kalau murid yang boleh lah. macam Kaedah Abjadlah, sebut hafal A sampai Z macam tu. Macam zaman kita belajar dulu, bagi dia kenal huruf dulu. Seterusnya kalau macam budak sekarang kan dia suka nyanyian, belajar sambil nyanyi kadang-kadang kakak pasang lagu. Nyanyi A, B, C tu kenal huruf…" (GA)
>
> Translation: If this method is the same as if we used it in the old days, we would teach the children, A to Z, there is also a method like that if the children can do it. like the Alphabet Method, memorize A to Z like that. It's like when we were learning first, for him to know the letters first. Next, if he's like a boy now, he likes to sing, he learns while singing, sometimes he plays songs. Sing A, B, C know the letters.
>
> "…kak perkenalkan huruf tu satu persatu iaitu kaedah abjad. Tapi akak tak guna kaedah pengajaran braille tu seperti ABKL tapi memang ajar satu-satu bermula dengan A hinggalah Z lah. Ikut turutan je lah. Macam tu je. Lepas tu bila dia orang dah kuasai 26 huruf tu. Tapi dalam masa yang sama, masa kita tengah perkenalkan huruf A hingga Z satu-satu semua tu. Maksudnya masa sama kita memang ajar dia dengan proses merasa semua huruf. Sekalilah. Maksudnya termasuklah dalam tu.Yang keduanya, memang kaedah pengulangan lah. Macam kak cakap tadi kan. Bila dah ajar A. Lepas tu esok tambah huruf baru. Dan huruf A sebelum tu, ulang balik. Ulang-ulang lagi. Lepas tu ajar huruf yang seterusnya." (GB)
>
> Translation: sister introduce the letters one by one which is the alphabet method. But I don't use the braille teaching method like ABKL, but I do teach one by one starting from A to Z. Just follow the sequence. It's like that. Then when he has mastered the 26 letters. But at the same time, we are introducing the letters A to Z one by one. It means that at the same time we really teach him through the process of feeling all the letters. Just once. The meaning is included in that. The second one, is indeed a method of repetition. Like

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you said earlier, right? When you have taught A. Then add a new letter tomorrow. And the letter A before that, repeat. Repeat again. Then teach the next letter.

"…saya gunakan Kaedah Fonik. Fonik, macam saya cakap tadi, saya akan kenalkan huruf vokal dulu tapi menggunakan kaedah fonik. Macam 'aa', 'ee', 'uu'. Lepastu, Kalau murid dah boleh saya akan ajar lima lagi konsonan. Saya memang ajar macam tu. Saya gunakan Kaedah Fonik menggunakan lima vokal dan lima konsonan. Saya memang ajar macam tu dari dulu. Bagi saya kaedah yang saya ajar ni, kalau budak yang boleh betul-betul belajar tiga bulan itu dia dah boleh belajar KV, KV. Itu bagi budak yang boleh belajar. Tapi kalau budak yang macam saya cakap *slow* sikit, dia mengambil terlalu lama. Tapi bukan menggunakan huruf braille yang normal tu. Tapi menggunakan yang saya cipta tu, objek besarlah. Tapi saya menggunakan Kaedah Foniklah…"(GC)

Translation: I use the Phonics Method. Phonics, like I said earlier, I will introduce vowels first but using the Phonics Method. Like 'aa', 'ee', 'uu'. Then, if the student can, I will teach five more consonants. I really teach like that. I use the Phonics Method using five vowels and five consonants. I really taught like that from the beginning. For me, the method I teach, if a boy can really study for three months, he can learn KV, KV. That's for a boy who can learn. But if a boy like me speaks a little slowly, he takes too long. But not using normal braille. But using the one I created, it's a big object. But I use the Phonics Method.

"…Kaedah Abjad A hingga Z. Seterusnya kaedah hafalan dan latihan tubi…" (GD)

Translation: Alphabet method A to Z. Then memorization method and drill.

Two primary teaching methods emerged from the interviews: the Alphabet Method and the Phonics Method. Most participants preferred the traditional Alphabet Method, which involves teaching letters A to Z sequentially. Rosfuzah Roslan et al. (2021) found that this method can be effective when combined with play-based learning and interactive multimedia. One participant reported success with the Phonics Method, which is supported by research from Farhana Abdullah Asuhaimi et al. (2018) and Sutinah Muhd Ali et al. (2016), indicating its effectiveness in accelerating reading progress. However, the lack of a standardized approach tailored to the braille code system is evident. A combination of reading instruction and braille coding might be more effective, adapting to the specific needs of visually impaired children. This suggests that a flexible, multi-method approach to teaching early braille reading skills may be most beneficial.

The Development Requirements of The Early Braille Reading Skills Module

In response to the study's central question, every one of the four educators who took part felt the need for a standardized curriculum outlining the basics of braille reading for preschoolers with visual impairments. The following are examples of responses provided by those who participated in the study:

"…kalau disediakan mungkin perlulah untuk dijadikan panduan dan sumber rujukan untuk membantu meningkatkan kemahiran bacaan awal braille…" (GA)

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Translation: if provided it may be necessary to be used as a guide and reference source to help improve early braille reading skills.

"…Ya, kalau disediakan. Saya rasa memang baguslah kalau kita disediakan modul. Memang membantulah maksudnya kalau ada modul itu dibekalkan. Bagi akak lah. Kalau pembangunan modul tu memang sangat membantulah kalau ada dibekalkan kan kepada guru-guru. kalau boleh macam modul tu dan juga ada panduan sekali lah macam tu…" (GB)

Translation: Yes, if provided. I think it's good if we provide modules. It really helps if the module is provided. It's for me. If the development of the module is really helpful, if it is provided to the teachers, right? if possible like that module and also have a guide like that.

"…bagi saya memang satu keperluan yang penting…".(GC)

Translation: for me it is an important need.

"…Ada. Kalau ada modul, lebih mudah lah untuk cikgu-cikgu jadikan bahan rujukan berguna untuk murid-murid braille…".(GD)

Translation: There is. If there is a module, it will be easier for teachers to make it a useful reference material for braille children.

All participants unanimously expressed the need for a special module for teaching early braille reading skills to visually impaired preschoolers. This aligns with the findings of Seriayuna Sa'don Zubir (2019) and Mohamed Ayob Bin Sukani and Arfah Abdul Karim (2019), who emphasize the importance of standardized lesson plans and professional development opportunities. The desired characteristics for such a module include a comprehensive user guide for teachers, appropriate teaching aids and materials, adaptable activities for both teachers and visually impaired children, emphasis on fine motor skill development, a dedicated activity book for visually impaired children, and a step-by-step structured approach to developing early braille reading skills. These characteristics are consistent with the recommendations of Intan Safinas Mohd Ariff Albakri et al. (2011) on the importance of using explanations and strategies suitable for a child's developmental stage. A standardized curriculum would provide clear guidance for educators and support a more consistent and effective approach to early braille literacy education.

Characteristics of the Early Braille Reading Skills Module

When we asked the instructors what they needed from the modules, they had a lot of ideas for how to make sure they were perfect for preschoolers who are visually impaired and learning braille. Here are some of the suggestions we received from the instructors:

"…Ciri-ciri modul yang diperlukan dalam kemahiran bacaan awal ni kalau untuk penglihatan ni perlu ada contoh-contoh bahan dan aktiviti yang sesuai untuk guru-guru praktikkan untuk murid-murid lah. Tapi cikgu dia tak adalah terikat sangat dengan modul tu kan mengikut kesesuaian murid…" (GA).

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Translation: The features of the module that are needed in this early reading skill are that for this vision there needs to be examples of materials and activities that are suitable for teachers to practice for the children. But the teacher is not very attached to the module according to the student's suitability.

"…Kalau boleh nak modul yang ada panduan penggunaan dan aktiviti ke, yang nak dimasukkan dalam tu. Selain itu, perbanyakkan aktiviti yang lebih kepada kemahiran motor dia juga lah kalau boleh, macam menekankan juga lah kan…" (GB).

Translation: If possible, I want a module that has usage guides and activities, which I want to include in that. In addition, increase activities that are more for his motor skills as well if possible, it's like emphasizing it, right.

"…Saya rasa macam kalau di dalam modul tu kan. Kita mesti nak ada kaedah pengajaran dalam modul dan perlu ada aktiviti. Lepas itu mesti ada bahan…" (GC).

Translation: I feel like it's in the module, right? We must have teaching methods in the module and there must be activities. After that there must be material.

"…Kalau untuk kemahiran bacaan awal braille, ciri-ciri modul yang saya nak yang menyeluruhlah. Menyeluruh, berperingkat, sesuai untuk anak-anak. Keperluan dia untuk modul ada panduan guru. Kalau boleh ada panduan guru dan panduan murid, buku aktiviti murid lebih senang. Jadi panduan guru dan aktiviti murid perlu ada dalam modul ini. Modul murid pula boleh diperbanyakkan untuk murid-murid. Murid-murid *apply* terus buat kerja dalam tu…"(GD).

Translation: If it's for early braille reading skills, the features of the module I want are comprehensive. Comprehensive, step-by-step, suitable for children. He needs a teacher's guide for the module. If there is a teacher's guide and a student's guide, a student activity book is easier. So the teacher's guide and student activities must be in this module. The student module can be increased for children. The children apply and continue to work there.

The characteristics of an effective early braille reading skills module, as described by the participants, indicate the need for a comprehensive and adaptable educational tool. This module should provide a user-friendly guide for teachers, offering clear instructions on braille instruction methods. It should include appropriate teaching aids and materials to support effective learning. The module should also feature adaptable activities to meet the diverse needs of both teachers and visually impaired children. An emphasis on fine motor skill development is crucial, as these skills are fundamental to braille reading. A dedicated activity book would provide structured exercises to engage young learners. Finally, a step-by-step structured approach would ensure a systematic progression in learning, accommodating different learning paces. These elements combined would create a comprehensive educational resource that addresses the unique challenges of teaching early braille reading skills.

In conclusion, developing a module that incorporates these features could significantly enhance the teaching of early braille reading skills to visually impaired preschoolers. By addressing the identified challenges and incorporating effective teaching methods, such a module could

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EISSN : 0128-164X
Volume 9 Issue 55 (September 2024) PP. 499-515
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improve the approach to early braille education, potentially enhancing literacy outcomes for visually impaired children. Future research should focus on creating and evaluating such a module, ensuring it meets the needs of both educators and learners in this specialized field. This comprehensive module has the potential to significantly improve access to literacy for visually impaired children, supporting their educational development and future opportunities.

Discussion

The study has successfully achieved its objective to identify the need to develop the braille early reading skills module for preschool children with special visual needs. The carried out needs analysis has revealed some important findings.

A summary of the study's findings shows that preschool teachers of special education vision face a variety of challenges in teaching early braille reading skills. Among the main challenges are students' lack of interest and readiness, varying levels of student development, difficulty identifying braille forms, weak fine motor skills, as well as a lack of reference materials and teaching guidance. This goes hand in hand with previous studies such as Muhammad Nizam Abdul Majid et al. (2022), Nik Ahmad Farid Nik Shabery, and Nurul Asiah Fasehah Muhamad (2022), who have similar issues.

In terms of theoretical implications, the study supports the importance of Piaget's cognitive development theory and Vygotsky's theory of social constructivism in the context of early braille learning. The study's findings demonstrated the need to consider the level of child development and the importance of social interaction in the learning process. It emphasizes the need to design modules that take into account aspects of child development and provide interactive learning opportunities.

From a methodological point of view, the use of semi-structured interview methods in the need analysis phase has enabled the collection of in-depth and detailed information from teachers. This approach enables researchers to identify specific issues encountered in the context of braille teaching at the preschool level while also contributing to the development of more relevant and practical modules.

This study's practical implications are very significant for the field of special education of vision. The proposed development of the braille early reading skills module will equip pre-school teachers of special education with the much-needed teaching resource. This module has the potential to improve the quality of braille teaching and learning in the early stages, subsequently helping to increase the braille literacy rate among children with special visual needs.

The study contributes to efforts to improve access to quality education for children with special visual needs from a social implications perspective. This is in line with SDG 4, which emphasizes quality and inclusive education for all. By developing modules that meet the specific needs of these children, the study supports efforts towards more inclusive and sensitive education.

However, this study has some limitations. Among them is a small sample size, limited to preschool teachers only. Future studies may consider involving a larger and more diverse sample, including parents and specialists in the field of special education for vision. In addition,

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EISSN : 0128-164X
Volume 9 Issue 55 (September 2024) PP. 499-515
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advanced studies can also assess the effectiveness of modules developed through experimental studies or longitudinal studies.

In conclusion, this study has provided a solid foundation for developing the braille early reading skills module needed in the context of special preschool education in Malaysia. This effort not only contributes to special education, but also supports the global sustainable development agenda by ensuring quality education for all, including those with special needs.

Acknowlegment
The authors would like to express their deepest appreciation and gratitude to the education sponsorship Division, The Ministry of Education, the Faculty of Human Development, Universiti Pendidikan Sultan Idris and all parties involved in writing this article.

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EISSN : 0128-164X
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DOI 10.35631/IJEPC.955033

Appendix A

UNIVERSITI PENDIDIKAN SULTAN IDRIS
اونيۏرسيتي ڤنديديقن سلطان ادريس
SULTAN IDRIS EDUCATION UNIVERSITY

MODULE NEEDS ANALYSIS STUDY INTERVIEW QUESTIONS

This study was conducted as a guide for researchers to identify the problems and needs to develop an early braille reading skills module for pre-school visually impaired children. It is hoped that teachers can provide insights and ideas to help researchers in the development of this early braille reading skills module in accordance with the needs of teachers and pre-school children with visual impairment. There are two parts in this interview question which is part A teacher information and part B interview questions.

Part A: Teacher Information

No.	Details
1.	Name:
2.	Gender:
3.	Age:
4.	Academic Qualification:
5.	School Name:
6.	Class Type:
7.	Options:
8.	Teaching Experience:

Part B: Interview Questions

QUESTION 1	What do you understand about early braille reading skills?
QUESTION 2	What challenges do you face in teaching early braille reading skills?
QUESTION 3	What is the appropriate method to use when teaching early braille reading skills for preschool children with visual impairment?
QUESTION 4	Is there a need to develop a module for teaching early braille reading skills for pre-school visually impaired children?
QUESTION 5	What are the features of the module needed in teaching early braille reading skills for preschool children with visual impairment?

Thank you for your cooperation. Hopefully this sharing of knowledge can both help in the field of preschool special education for the visually impaired.