

**1st International Conference, Exhibition & Innovation
on Public Health & International Community Services
Waterfront Hotel Kuching, Sarawak, Malaysia
19-22 Aug 2025**

Organiser: Universiti Teknologi MARA (UiTM), Malaysia
Co-Organisers: Universitas Muhammadiyah Malang (UMM), Indonesia, Universitas Airlangga (UNAIR), Indonesia, UiTM Technoventure, Malaysia

**Exploration of Handwriting Issues among Specific Learning Disorder Children
in Primary School in Malaysia from Teachers' Perspectives**

Muhammad Azwan Azri¹, Ahmad Zamir Che Daud^{2*}, Rofiza Aboo Bakar³, Muhammad Radhi Rahimi Abu Bakar⁴

**Corresponding Author*

^{1,4} Centre for Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Pulau Pinang Branch, Bertam Campus, Kepala Batas, Pulau Pinang, Malaysia

² Centre for Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Selangor Branch, Puncak Alam Campus, Bandar Puncak Alam, Selangor, Malaysia

³ Academy of Language Studies, Universiti Teknologi MARA, Pulau Pinang Branch, Permatang Pauh Campus, Permatang Pauh, Pulau Pinang, Malaysia

azwanazri@uitm.edu.my, zamir5853@uitm.edu.my, rofiza@uitm.edu.my, radhirahimi@uitm.edu.my
Tel: +6013-380 1979

Abstract

Handwriting is vital for academic success, yet many children with specific learning disorders struggle with it. This study examined handwriting challenges in Malaysian primary schools through teachers' lived experiences. Using a phenomenological design, seven teachers from a special education program in Pulau Pinang were interviewed. Thematic analysis highlighted three subthemes: students' handwriting difficulties, lack of parental support at home, and the impact of these challenges on learning. Findings emphasise the need for tailored interventions and stronger home-school collaboration to improve handwriting outcomes and promote educational inclusion for children with specific learning disorders.

Keywords: Handwriting; Specific learning disorder; Primary school children; Occupational therapy.

eISSN: 2398-4287 © 2025. The Authors. Published for AMER by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers DOI: <https://doi.org/10.21834/e-bpj.v10iSI35.7486>

1.0 Introduction

Handwriting is a foundational skill that plays a crucial role in academic performance, particularly for primary school children. However, children with specific learning disorder (SLD), including those diagnosed with dysgraphia, face significant challenges in acquiring this skill due to both cognitive and motor difficulties. As highlighted by Kushki et al. (2011), the difficulties faced by children with SLD are

eISSN: 2398-4287 © 2025. The Authors. Published for AMER by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers DOI: <https://doi.org/10.21834/e-bpj.v10iSI35.7486>

multifaceted, affecting not only their motor control but also their cognitive abilities related to written expression. Furthermore, research shows that children with SLD often encounter difficulties in other areas such as reading and arithmetic, which may compound their overall academic struggles (Kushki et al., 2011; Zainol et al., 2022). The Ministry of Education's policy in Malaysia emphasises the mastery of basic skills, including handwriting, for all primary school students. Despite this, studies have shown that many children with SLD in Malaysia continue to struggle with basic handwriting tasks, further hindering their academic success and social inclusion (Ahmad Dawawi & Yamat, 2022). While various intervention approaches have been suggested internationally, there is a notable gap in understanding how handwriting challenges are perceived and addressed specifically within the Malaysian educational context.

Accordingly, this study aimed to explore the perspectives of special needs education teachers regarding handwriting difficulties among children with SLD in Malaysian primary schools. In particular, the study sought to capture teachers' lived experiences and professional insights, thereby allowing themes to emerge inductively from the data. The objective of the study is to examine handwriting challenges through teachers' lived experiences. It offers insights that may inform the development of evidence-based interventions, such as the potential application of the Cognitive Orientation to Daily Occupational Performance (CO-OP) approach, in supporting handwriting skill development.

2.0 Literature Review

Handwriting is a critical literacy skill for children, influencing not only written expression but also broader academic outcomes. A recent cross-disciplinary review by Fogel et al., (2022) found that handwriting performance is shaped by a range of factors, including neuromotor development, visual-motor integration, and cognitive aspects such as working memory and linguistic processing. Lee emphasised that handwriting is not merely a motor activity but involves multiple interrelated processes. This perspective supports the idea that children struggling with handwriting difficulties may face challenges across various domains rather than a singular isolated issue (Jolly et al., 2024).

In the Malaysian context, research on handwriting difficulties among school-age children has started to gain momentum. Zainol et al., (2022) conducted interviews with teachers, occupational therapists, and parents to uncover the factors contributing to handwriting challenges. They identified motor skills deficiencies, poor visuomotor skills, lack of parental support, and low self-motivation as key factors. Their study argued for the development of structured intervention guidelines tailored to the Malaysian educational context (Zainol et al., 2022). However, this research did not explore these challenges specifically within the context of children diagnosed with learning disabilities, a gap that is critical to address.

The present study aims to bridge this gap by examining the handwriting difficulties of primary school children. While prior research has focused on younger children, general handwriting difficulties, or broad intervention efficacy, few studies have specifically addressed children with learning disabilities or explored the interaction of motor, visuomotor, cognitive, and environmental factors in this population. By focusing on this specific subgroup, the study aims to provide evidence that will inform educational and therapeutic practices in Malaysia, addressing a critical gap in the literature on handwriting challenges among children with learning disabilities.

3.0 Methodology

3.1 Research design

This study was conducted in a government-funded primary school with Integrated Special Education Program or known as *Program Pendidikan Khas Integrasi (PPKI)* located in Pulau Pinang, Malaysia as to consider local context.

A phenomenological approach underpinned the study design in understanding the lived experiences of teachers managing handwriting difficulties among special needs students. Phenomenology focuses on the meaning individuals attribute to their everyday experiences, and was deemed appropriate to explore how teachers interpret, respond to, and support children with handwriting difficulties in real-world school settings (Fajariani et al., 2025; McNamee & Patton, 2018).

Ethical approval was obtained from the Educational Research Application System (eRAS 2.0) under the Ministry of Education (MOE) with approval number KPM.600-3/2/3-eras(21943) and from Universiti Teknologi MARA research ethics committee with approval number REC/11/2025 (ST/FB/27).

3.2 Sample

Participants were recruited through purposive sampling, targeting teachers with direct experience teaching specific learning disorder children. Program coordinator assisted in identifying potential participants who met the inclusion criteria. The inclusion and exclusion criteria are as the following. A total of 7 teachers were interviewed. According to Hennink (2007), number of participants in FGD is around 6-10 persons. Researcher has invited 10 teachers for this FGD. Only 7 teachers were able to join the FGD due to others were restricted with on-going classes or in the midst of doing another task. The inclusion and exclusion criteria are as in Table 1.

Table 1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> teachers who had taught specific learning disorder children for at least six months 	<ul style="list-style-type: none"> unable to make time for an interview

-
- able to participate in an interview session
 - not able to understand neither English or Bahasa Malaysia
 - able to understand and communicate in English or Bahasa Malaysia
-

3.3 Data collection procedures

Focus group discussions were conducted following Krueger (2002) protocol, with informed consent obtained beforehand. Participants, purposively recruited according to inclusion criteria, were briefed on the study's purpose and assured of confidentiality. Each group comprised 6–10 teachers sharing relevant characteristics. A semi-structured guide with open-ended questions encouraged participants to reflect deeply on their personal and professional experiences, while ensuring consistency across groups. The interview guide was developed from literature, research objectives, and expert input, covering handwriting challenges, support strategies, barriers, and needs.

Discussions were facilitated by a trained moderator adopting a non-directive stance, supported by an assistant moderator who documented notes and non-verbal cues. Sessions, conducted in English or Bahasa Malaysia, lasted 60–90 minutes in comfortable school settings. Audio recordings and field notes captured data, and moderators summarised key ideas for participant validation. Transcriptions were completed promptly, with data securely stored. This approach provided rich, descriptive accounts aligned with phenomenological design, capturing teachers' lived experiences of handwriting challenges while maintaining rigour and trustworthiness.

3.4 Data analysis

Data were analysed using Braun & Clarke's (2006) six-phase framework for thematic analysis, which provides a flexible yet rigorous approach to identifying and interpreting patterns of meaning within qualitative data. Focus group recordings were transcribed, coded, and organised into themes through iterative analysis. Themes were reviewed, refined, and clearly defined, ensuring coherence and groundedness in participants' perspectives. Reflexivity minimised bias, while verbatim extracts preserved participants' voices. This inductive approach identified meaningful patterns across cases, ensuring trustworthy, participant-centred findings.

3.5 Trustworthiness

Trustworthiness followed Lincoln and Guba's criteria: credibility through prolonged engagement, member checking, and peer debriefing; transferability via thick descriptions; dependability through systematic thematic analysis, documentation, and audit trail; and confirmability by reflexivity and reflective notes. These strategies ensured accuracy, transparency, and authenticity, grounding findings in participants' perspectives.

4.0 Results

A total of seven special education teachers participated in the focus group discussions, consisting of five females and two males. Their ages ranged from 30 to 52 years, while their teaching experience varied from 3 to 20 years. All participants were actively involved in teaching children with specific learning disorders (SLD), including those with handwriting difficulties. The demographic data of the participants are as in Table 2.

Table 2: Demographic data of the participants

Participant Code	Gender	Age (years)	Teaching Experience (years)
Participant 1	Female	30	3
Participant 2	Male	34	5
Participant 3	Female	37	6
Participant 4	Female	40	12
Participant 5	Female	45	15
Participant 6	Male	50	18
Participant 7	Female	52	20

The analysis of interviews with teachers revealed three themes concerning handwriting issues among special needs students in primary schools: (1) Challenges Faced by Students in Handwriting, (2) Non-compliance or Lack of Continuity of handwriting support by Parents or Caregivers at Home, and (3) Consequences of handwriting difficulties. Together, these subthemes illuminate a multifaceted problem that extends across developmental, instructional, and systemic dimensions.

Theme 1: Challenges faced by the students in handwriting

This theme captures the difficulties experienced by children with SLD in developing handwriting skills, as described by their teachers. Teachers described how physical limitations and lack of motor control, inappropriate tools, cognitive aspects, and social influences all contributed to handwriting difficulties. These issues were perceived as persistent and complex, requiring ongoing adaptations and support.

Subtheme 1.1: Motor skills challenges

Motor skills challenges were consistently reported by participants as one of the most significant barriers to handwriting among students with special needs. Teachers described difficulties such as weak hand muscles, poor fine motor control, and ineffective pencil grip. In some cases, physical impairments or anatomical differences further restricted students' ability to produce legible handwriting which eventually limit students' participation in the classroom.

"One of the main challenges is how they hold the pencil as it really affects their learning in class." (Participant 3)

"Hand strength plays an important role. If students can't use their hand muscles properly, they won't be able to grip the pencil correctly." (Participant 7)

"I have students who just float the pencil on the page. They don't press down, and their writing ends up messy. It's because their hand muscles are weak." (Participant 5)

Subtheme 1.2: Tool and writing utensil suitability

Teachers highlighted the unsuitability of standard classroom tools and materials as another key factor affecting students' handwriting. In many cases, the size or shape of pencils did not accommodate students' hands, particularly for those with physical differences. To address this, teachers often improvised by adapting the tools with rubber bands, sponge wraps, or thicker alternatives.

The following quotes illustrate these practical challenges and the strategies teachers adopted to compensate:

"Sometimes we wrap pencils with rubber or sponge to make them easier to hold. Otherwise, they just can't grip them properly." (Participant 4)

"We use those four-lined books, but they confuse some students. Their writing is too big and all over the place—the lines just aren't helpful for them." (Participant 2)

Subtheme 1.3: Cognitive function

Some students lacked basic writing knowledge, such as how to hold a pencil, form letters, or construct words. These difficulties were not always rooted in motor impairments but instead stemmed from limited exposure to writing, developmental delays, or insufficient understanding of written language structures.

"Some tasks are just too difficult, like writing numbers in word form. They don't know how to write, and they don't even know how to hold the pencil properly." (Participant 3)

Subtheme 1.4: Peer behaviour

Beyond individual readiness, teachers also emphasised the role of peer behaviour. Students were observed to mirror the actions of their peers, with disengagement spreading quickly. When peers refused to write or showed little interest, other students often followed suit, regardless of their actual abilities. This social modeling effect is captured in the following quotes:

"When they see their friends not writing, they don't want to write either. They just follow what others are doing." (Participant 5)

"It's not just the student. The environment matters too. If the kids around them aren't working, they'll stop trying as well." (Participant 7)

Theme 2: Non-compliance or lack of continuity of parents or caregivers at home

Teachers also stressed that these difficulties were compounded by what happened outside the classroom. A recurring theme in their accounts was the critical gap in continuity of handwriting intervention between school and home. While interventions were initiated in school, the lack of consistent reinforcement and coordination at home posed challenges to sustaining and reinforcing these skills.

Subtheme 2.1: Limited parental involvement in learning process

Teachers reported that many parents did not actively engage in supporting their children's handwriting development at home. While schools initiated structured interventions, these efforts often stopped at the classroom door, with minimal continuation at home.

"Usually, the student starts off without any continuity from school to home. When we teach writing at school, we don't always involve parents. So at home, writing isn't practised. If there's no follow-up, the student forgets what we taught." (Participant 3)

"Practising and training should not be just the teacher's job. When the child goes home, the father or mother should play a role too." (Participant 7)

Subtheme 2.2: Inconsistent technique and practice at home

Even when parents were involved, some unintentionally taught incorrect pencil grip or writing habits, which conflicted with school methods. Teachers noted that correcting ingrained habits later became difficult, especially among children with special needs who struggle with change.

"Even when fine motor skills are okay, the way parents teach at home can cause issues. For example, some teach the child to grip the pencil too high or use just two fingers. When they're comfortable with the wrong grip, by the time they reach school age, it's hard to rectify." (Participant 6)

"The way students are taught at home doesn't always align with what we do here. If we don't standardise it early, their grip and technique become hard to fix." (Participant 6)

Subtheme 2.3: Lack of foundational preparation before school

Teachers also voiced concern that many students arrived at school with no basic preparation for handwriting. They emphasised that parents should introduce fine motor activities at home before school entry and support therapy outside of class. Without this early preparation, children often begin school far behind in handwriting readiness.

"It has to start at home. Parents need to do basic fine motor training before school. Then we can practice at school and reinforce it. It's not just at school. It includes therapy too to strengthen hand muscles." (Participant 5)

"This all starts from home too. If parents don't begin early with fine motor practice, by the time they get to school, they're already behind." (Participant 4)

Theme 3: Effects of having handwriting issues

Teachers described various negative consequences arising from students' difficulties with handwriting. The effects extended beyond academic performance and included behavioural and emotional challenges. The inability to write led to disengagement in classroom tasks, disrupted learning for peers, and created a barrier to assessing students' true capabilities.

Subtheme 3.1: Academic performance

Handwriting difficulties were reported to interfere with students' ability to complete written tasks during classroom learning and formal assessments. Teachers observed that some students understood lesson content and could answer questions orally but were unable to demonstrate their knowledge in written form.

"When their writing isn't there, they can't master the subject. It becomes a barrier—not just for teachers but for the students themselves. For example, some can answer, but they can't write. So we have to use oral questioning, especially during exams. If we wait for them to write, there won't be any answer." (Participant 1)

Subtheme 3.2: Classroom disengagement and off-task behavior

Teachers shared that students who could not write often refused to participate in learning tasks. They would either become idle, disturb others, or disengage from the lesson altogether. This pattern was consistently reported as stemming from the frustration of not being able to keep up with peers in writing-based activities.

"If a student can't write, they won't do the classwork. During writing activities, they just sit there. It affects their focus and eventually they start distracting other students." (Participant 2)

"When they can't write, what else can they do? They get up and walk around while others are doing work." (Participant 3)

Subtheme 3.3: Emotional response

Students with handwriting difficulties often displayed emotional distress and disruptive behaviours. Teachers reported instances of students crying or throwing tantrums, particularly when faced with writing tasks. These reactions were linked to the stress and frustration they felt when unable to perform like their peers.

"There were emotional issues—some students cried, felt stressed, or acted out in class. They couldn't focus, and they started disturbing others." (Participant 3)

"Sometimes they shake the table, not just cry. It becomes a form of emotional expression." (Participant 4)

The cumulative effect is that students with handwriting challenges risk being misunderstood, underestimated, and excluded from meaningful participation in learning activities. This underscores the need for targeted interventions that address both the technical aspects of handwriting and the broader social-emotional implications within the learning environment.

5.0 Discussion

Three themes from the findings of this study echo many aspects of the existing literature while also offering unique insights into how these factors interact in the context of Malaysian primary schools.

5.1 Students' issues in handwriting activities

The first theme highlights the various difficulties students with special needs encounter in performing handwriting activities. A central issue is motor skills, including weak hand muscles and poor fine motor control, which align with findings from previous research (Kushki et al., 2011). Studies by McClelland & Cameron, (2019) also support the view that motor deficits significantly hinder children's ability to effectively engage in handwriting tasks. Moreover, teachers in the current study noted the impact of unsuitable tools, such as standard pencils that were too small for children with physical differences. This finding mirrors the work of Richards et al., (2022), who found that tool suitability is a significant factor in handwriting performance for children with disabilities.

Additionally, the cognitive and behavioural challenges that contribute to handwriting difficulties are consistent with previous research by Kushki et al. (2011), which highlighted how developmental delays, limited exposure, and inadequate understanding of written language structures exacerbate handwriting struggles. Children with special needs often face delays in acquiring basic writing knowledge, such as how to properly hold a pencil or form letters. This finding supports the research by Bray et al., (2021), which identified cognitive factors as integral to handwriting development.

5.2 Non-compliance or lack of continuity of parents or caregivers at home

The second theme, reflects a gap in the integration of handwriting interventions between school and home. Teachers noted that many students made limited progress because parents were either uninvolved or inconsistent in reinforcing handwriting skills at home. This resonates with studies by Zainol et al. (2022), which emphasised the critical role of parental engagement in developing children's handwriting abilities. The lack of parental involvement may result from parents' limited understanding of how to support their child's learning effectively, a concern echoed in the work of Richards et al. (2022), which pointed out that inadequate parental involvement exacerbates handwriting difficulties.

Inconsistent practices between school and home were also problematic, as some parents unintentionally taught incorrect habits, such as improper pencil grips. This finding is consistent with research by Caravolas et al., (2020), which highlighted that the reinforcement of incorrect handwriting techniques at home could hinder progress and complicate later corrections.

5.3 Effects of having handwriting issues

The third subtheme, which addresses the broader effects of handwriting difficulties, highlights the significant academic and social consequences that arise from these issues. Handwriting difficulties not only impact students' ability to complete tasks efficiently but also affect their academic performance, self-esteem, and social interactions. This finding is consistent with the work of McClelland & Cameron (2019), which showed that poor handwriting significantly reduces academic achievement, particularly in subjects that require written expression.

Moreover, the emotional and psychological toll of handwriting difficulties cannot be overlooked. Children who struggle with handwriting often experience feelings of frustration and inadequacy, which can lead to disengagement from academic activities (Fajariani et al., 2025). This finding is in line with research by Richards et al. (2022), who noted that poor handwriting can lead to decreased motivation and self-confidence among students.

Limitations of the study

This study has several limitations. It consists of reliance on teachers' views excludes students' and parents' perspectives due to specific inclusion criteria; small, context-specific sample limits generalizability; self-reported interviews risk response bias; and qualitative design, while offering depth, restricts causal inferences and statistical generalisation, limiting a holistic understanding of handwriting challenges across broader contexts.

6.0 Conclusion

In conclusion, this study contributes valuable insights into the handwriting challenges faced by children with specific learning disorder in Malaysian primary schools. By highlighting the lived experiences of teachers, these information provide a comprehensive understanding of the difficulties these students face. Future research should continue to explore the effectiveness of various interventions and the role of parental involvement in improving handwriting outcomes for children with special needs.

7.0 Recommendations for Future Research

Future research should include students' and parents' perspectives, larger diverse samples, and mixed-methods or longitudinal designs to strengthen generalizability and links to outcomes. Exploring interventions like CO-OP, assistive technologies, and parent-teacher collaboration, while considering social and environmental factors, can yield holistic, sustainable strategies for handwriting difficulties.

Implications for Practice

This study highlights the need for handwriting interventions to address not only motor skills but also cognitive and social factors. Teachers should receive strategies to adapt tools and materials, improve communication with parents, and foster a positive classroom environment through peer modeling, ensuring comprehensive support for students' handwriting development.

Acknowledgement

I would like to express my gratitude to all respondents for participating in this study. I also would like to thank to Ministry of Higher Education for funding this project via Fundamental Research Grant Scheme (FRGS) (Sponsorship file no.: FRGS/1/2022/SKK06/UITM/03/3) and Universiti Teknologi MARA Cawangan Pulau Pinang for the financial support.

References

- Ahmad Dawawi, S. N., & Yamat, H. (2022). Identifying Problems in Writing among Year 2 Pupils in a Malaysian Primary School. *Journal of English Language Teaching and Applied Linguistics*, 4(2), 140–150. <https://doi.org/10.32996/jeltal.2022.4.2.13>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bray, L., Skubik-Peplaski, C., & Ackerman, K. B. (2021). A Systematic Review of the Effectiveness of Interventions to Improve Handwriting and Spelling in Children with Specific Learning Disabilities. *Journal of Occupational Therapy, Schools, and Early Intervention*, 14(4), 437–465. <https://doi.org/10.1080/19411243.2021.1934227>
- Caravolas, M., Downing, C., Hadden, C. L., & Wynne, C. (2020). Handwriting Legibility and Its Relationship to Spelling Ability and Age: Evidence From Monolingual and Bilingual Children. *Frontiers in Psychology*, 11(June), 1–18. <https://doi.org/10.3389/fpsyg.2020.01097>
- Fajariani, D., Komariyah, D., Yamanishi, Y., Suyama, N., Ito, Y., & Phadsri, S. (2025). Analyzing Occupational Performance of Children With Handwriting Difficulties: Parent and Teacher Experiences and Perspectives. *Occupational Therapy International*, 2025. <https://doi.org/10.1155/oti/8882049>
- Fogel, Y., Rosenblum, S., & Barnett, A. L. (2022). Handwriting legibility across different writing tasks in school-aged children. *Hong Kong Journal of Occupational Therapy*, 35(1), 44–51. <https://doi.org/10.1177/15691861221075709>
- Hennink, M. M. (2007). *Number of groups and group size - International Focus Group Research: A Handbook for the Health and Social Sciences* (pp. 135–151). Cambridge University Press. <https://doi.org/10.1017/CBO9780511619458.008>

- Jolly, C., Jover, M., Danna, J., Jolly, C., Jover, M., Danna, J., Differs, D., & Children, B. (2024). Dysgraphia Differs Between Children with Developmental Coordination Disorder and/or Reading Disorder. *Journal of Learning Disabilities*, 57(6), 397–410. <https://doi.org/10.1177/00222194231223528>
- Krueger, R. A. (2002). *Designing and Conducting Focus Group Interviews*. University of Minnesota. <https://conservancy.umn.edu/handle/11299/45272>
- Kushki, A., Chau, T., & Anagnostou, E. (2011). Handwriting difficulties in children with Autism spectrum disorders: A scoping review. *Journal of Autism and Developmental Disorders*, 41(12), 1706–1716. <https://doi.org/10.1007/s10803-011-1206-0>
- McClelland, M. M., & Cameron, C. E. (2019). Developing together: The role of executive function and motor skills in children's early academic lives. *Early Childhood Research Quarterly*, 46, 142–151. <https://doi.org/10.1016/j.ecresq.2018.03.014>
- McNamee, T., & Patton, S. (2018). *Teachers' perspectives on handwriting and collaborative intervention for children with Autistic Spectrum Disorder*. 46, 46–58. <https://doi.org/10.1108/IJOT-12-2017-0026>
- Richards, L., Avery, R., Gray, S., & Price, R. (2022). Relationship of Retained Primitive Reflexes and Handwriting Difficulty in Elementary-Age Children. *The American Journal of Occupational Therapy*, 76(Supplement_1), 7610505010p1-7610505010p1. <https://doi.org/10.5014/ajot.2022.76s1-rp10>
- Zainol, M., Kadar, M., Razaob, N. A., & Wan Yunus, F. (2022). The Effectiveness of Occupational Therapy Handwriting Intervention for Children with Motor Coordination Issues: A Systematic Review. *Jurnal Sains Kesihatan Malaysia*, 20(1), 161–177. <https://doi.org/10.17576/jskm-2022-2001-15>