

# The perception of special education teacher in teaching students with dyslexia

Wai Wai Lim<sup>1</sup>, Kee Jiar Yeo<sup>1</sup>, Lina Handayani<sup>2</sup>

<sup>1</sup>School of Education, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, Johor Bahru, Malaysia

<sup>2</sup>Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

## Article Info

### Article history:

Received Jul 2, 2021

Revised Apr 10, 2022

Accepted May 12, 2022

### Keywords:

Dyslexia

Mobile learning applications

Multisensory approach

SEIP dyslexia program

Teaching challenges

Teaching strategies

## ABSTRACT

Language learning is the biggest challenge for students with dyslexia. Therefore, special education teachers play a pivotal role in assisting students with dyslexia to mitigate any difficulties in their language learning process. This study explored the perception of special education teachers in terms of their experience, challenges faced, and strategies adopted to assist students with dyslexia in the learning process. A semi-structured interview session was conducted with three participants from three primary schools under the Special Education Integration Program (SEIP) Dyslexia Program. The findings indicated that it was challenging for special education teachers to teach students with dyslexia because they lacked the effective teaching methods and resources. Based on their teaching experiences, students with dyslexia encountered difficulties in phoneme-grapheme associations, sound blending, and segmentation. Additionally, the participants perceive that the adoption of a multisensory approach and the utilisation of mobile learning applications are two effective strategies to improve the teaching of language to students with dyslexia. Lastly, this study provided vital findings to be used as research materials by other like-minded researchers in the future.

This is an open access article under the [CC BY-SA](#) license.



## Corresponding Author:

Wai Wai Lim

School of Education, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia

81310 UTM Johor Bahru, Johor, Malaysia

Email: candy\_lww@yahoo.com

## 1. INTRODUCTION

According to the Malaysian Education Blueprint (2013-2025), 1% of the population in the country is identified as having special educational needs. Students with special needs require additional support to achieve academic success due to their disabilities. In the Malaysian school system, special needs students can choose from one of the three schooling options, namely special education schools, Special Education Integration Program (SEIP) or inclusive education program (IEP). Special Education Schools cater to students with hearing or vision impairment, and/or learning disabilities, whereas SEIP incorporates specific classes for students with special needs and learning problems in the mainstream schools. As for IEP, one to five students with special needs attend the mainstream classes in the mainstream schools. Based on the statistics from the Malaysia Special Education System, the majority of the students with special needs enrolled in the SEIP [1].

In general, students with special needs in Malaysia are categorised as having three main disabilities, namely visual impairment, hearing impairment, and learning difficulties. Data from the special Education Department indicated that students with learning difficulties contributed to the biggest proportion, compared to the other two groups of students with special needs [2]. Learning disability is defined as a neurological condition that affects the learner's ability in receiving, recognising, storing, and retrieving information on

demand [3]. The learning difficulties (LD) group comprises children diagnosed with dyslexia, autism, attention deficit and hyperactivity disorder (ADHD), down's syndrome, and minimal mental retardation.

Among the various diagnoses, dyslexia are the most common learning disability that affects the learner's ability in reading, spelling, and writing. Learners with dyslexia often experience difficulties in mapping the sounds with the corresponding letters and blending the sounds to form a word. Furthermore, they also exhibit characteristics such as inability to decode and recognise words, omission of words while reading and writing, difficulty with sequencing, and poor short-term memory. These difficulties are neurological in origin and not directly related to low-level intelligence. Typically, learners with dyslexia read at a significantly lower level than expected for their age and level. They frequently lose directionality in the text and miss out on certain lines, causing them to read with long pauses and hesitations [4]. Therefore, students with dyslexia are sometimes mistakenly labelled as lazy, slow, and less smart in school, resulting in them having low self-esteem.

Even though it is crucial to focus on the needs of students with dyslexia in language learning, understanding the experiences of teachers in dealing with students with dyslexia is also important as they play a pivotal role in supporting students with dyslexia in learning. Many studies on the teachers' experiences in educating students with dyslexia have been conducted. For instance, Lemperou, Chostelidou, and Griva [5] revealed that a vast majority of English Foreign Language (EFL) teachers lacked the knowledge in devising an appropriate teaching approach to ease the load of students with dyslexia in the process of learning a language. Likewise, Ahmad, Ali, and Salehuddin [6] reported that EFL teachers were not equipped with effective teaching approaches to mitigate the difficulties faced by students with dyslexia.

Moreover, Alawadh [7] indicated that most of the teachers did not possess sufficient knowledge of dyslexia and they were also not given special training to manage students with dyslexia. Apart from that, many teachers lacked basic knowledge on how to teach children with dyslexia [8]. For instance, most teachers could only apply basic language concepts such as syllable counting but they often failed to demonstrate explicit knowledge such as phonics principle. Moreover, they also possess certain misconceptions such as dyslexia is a visual processing deficit rather than a phonological processing deficit.

Previous studies mainly focused on the challenges encountered by educators who taught students with dyslexia in mainstream classrooms. However, Malaysian special education teachers' perspectives under SEIP Dyslexia Program have not yet been explored. Therefore, this study aimed to explore the perceptions of special education teachers who teach students with dyslexia under the SEIP Dyslexia program in Malaysia. The study set out to answer the following questions: i) What are the experiences of special education teachers in teaching students with dyslexia under the SEIP dyslexia program?; ii) What are the challenges encountered by special education teachers in teaching students with dyslexia under the SEIP dyslexia program?; and iii) What are the strategies employed by special education teachers in teaching students with dyslexia under the SEIP dyslexia program?

The findings of this study could greatly contribute to gain a better insight into the current situation. It also challenges encounter by special education teachers under SEIP dyslexia program. In turn, it enables school administrators to provide the kind of needs and supports for teachers who teach students with dyslexia under SEIP dyslexia program.

## 2. RESEARCH METHOD

This study applied the qualitative method in exploring the perceptions of special education teachers in teaching students with dyslexia. A semi-structured interview session was conducted with three participants from three different primary schools involved in the SEIP dyslexia program. There were two schools located in Melaka and one in Johor, Malaysia. A purposive sampling technique was used to select teachers with at least three years of experience in teaching students with dyslexia under the SEIP Dyslexia Program.

The questions in the semi-structured guide for this study were designed based on the literature relevant to the experiences of special education teachers in terms of the challenges they faced and the strategies they adopted when teaching students with dyslexia [8]–[10]. The interview guide included questions and the participants could converse in Malay or English based on their preferences. The interviews were recorded, transcribed, and analysed with NVivo software. Pseudonyms i.e. Teacher A, Teacher B, and Teacher C were used in this study to protect the identities of participants.

## 3. RESULTS AND DISCUSSION

Based on the interviews with the three teachers, the findings can be divided into three sections. The sections are the experience of special education teachers, the challenges faced, and the strategies adopted. Table 1 displays an overview of the participants' baseline characteristics.

Table 1. Baseline characteristics of participants

No	Participants	Gender	Location of school	Subject	Experience in teaching students with dyslexia
1.	Teacher A	Female	Johor	Malay Language	10 years
2.	Teacher B	Female	Melaka	Malay Language	5 years
3.	Teacher C	Female	Melaka	English	15 years

### 3.1. The experience of special education teachers with students with dyslexia

The participants shared some of their experiences in relation to the difficulties faced by students with dyslexia during the interview sessions. All three participants agreed that the students faced difficulty in mapping the sounds with letters and blending the sounds to form a word. These results are consistent with the claim that dyslexia arises from an underlying phonological deficit [11]–[13]. Learners with phonological deficits often experience difficulties in discriminating the sounds in a word, manipulating the sound to form a word, and segmenting a word into constituent phonemes [14]–[16].

Teacher B complained that a majority of students struggled in sequencing the letters of a word. For instance, they tended to omit or add a letter in a word. As a consequence, they made more errors in word spelling compared to their peers. Moreover, two participants agreed that students with dyslexia showed impaired writing skills.

*“They take time to copy the passage or text and they have poor handwriting as well. No spacing when writing...When the teacher asks the question from the text (after the teacher read the whole text), they can answer the question verbally but unable to write it down.”*  
(Teacher A)

*“Constructing the sentences is quite difficult for them and there are so many mistakes in writing, especially in spelling.”* (Teacher B)

This finding is supported by Hebert *et al.* [17] in which students with dyslexia are unable to write rapidly with correct letter formation as they need to develop ideas while writing. On top of that, they often have poor handwriting. As to the reason why students with dyslexia make more spelling errors compared to their peers, one of the postulated theories was that these students found it more difficult to produce the serially-ordered letters when presented in an auditory rather than visual form [18]. Moreover, they tend to spell the words by imitating the sound of the words (e.g. ‘thay’ for they, ‘wus’ for was) as they do not receive any visual cues in the spelling process [19]. Apart from the spelling errors, impaired motor skills such as poor pencil grip can also result in them having messy handwriting [20].

Teacher A reported that some of the students with dyslexia were unable to differentiate b and d, p and q, as well as u and n even though they were already upper primary students. Furthermore, they also had poor working memory. This finding supports the idea of Duff, Hulme, and Snowling [21] who suggested that learners with dyslexia have poor phonological short-term memory and slow automatic naming. Nevertheless, two teachers claimed that students with dyslexia could understand and answer in the right context when the teacher read the sentences or passages. A possible explanation for this might be that students with dyslexia have trouble with language, not knowledge [22].

*“Students with dyslexia can answer the questions when the teacher reads the text or sentences. They will take a long time to read without any assistance and this causes them to be unable to complete the examination on time.”* (Teacher A)

*“They need a reader to understand the context.”* (Teacher C)

### 3.2. Challenges encountered by special education teachers in teaching students with dyslexia

The main challenge faced by the three participants was the lack of training related to dyslexia. They obtained better awareness and understanding of dyslexia via private dyslexia workshops or Peer Learning Coaching (PLC) in schools. Additionally, Teacher B expressed that she was less proficient and confident in teaching English phonics to students with dyslexia even though she graduated from a special education degree program. The consensus from all three participants centred on the need for the Ministry of Education to provide more dyslexia training courses that enhance their teaching method. However, these results differ from the study carried out by Ghani *et.al* [23]. They reported that mainstream teachers who are appointed to teach students with dyslexia were provided a short course (3 to 7 days) for them to improve their teaching.

*"No special dyslexia training course for us. MOE only organised one training course that integrated all special needs in 2008. We held PLC to exchange teaching ideas among ourselves and attended dyslexia workshop."* (Teacher A)

*"MOE did not provide any course or training for us. I can only rely on my teaching experiences and the MOE dyslexia guideline to teach students with dyslexia."* (Teacher B)

*"So far, I have never attended any courses on dyslexia held by KPM, JPN, or PPD. I hope MOE can provide such training for us."* (Teacher C)

Additionally, all three teachers agreed that they lacked the appropriate resources and teaching tools to assist students with dyslexia in learning languages, particularly English. This issue was also mentioned by Yuzaidey *et al.* [24] who highlighted the lack of structured teaching and learning modules for students with dyslexia in Malaysia. Teacher C asserted that teachers require more resources to help students with dyslexia as every student has different levels of difficulties. Teacher A highlighted the fact that they do not have any special modules for students with dyslexia, other than textbooks.

Hence, Teacher A also mentioned that students with dyslexia in her school were placed in mainstream classrooms. It was happened due to insufficient special education teachers who were qualified to teach English. As a consequence, they may fall behind in the mainstream classrooms as they require different approaches to teaching, not to mention customised supporting materials.

Managing the emotion, behaviour, and motivation of students with dyslexia is another challenge faced by special education teachers. Teacher A and teacher B both asserted that they felt quite challenged when dealing with students with dyslexia who suffered from low self-esteem and high sensitivity. They require tender love, care, and attention from the teachers instead of knowledge. Teacher C also highlighted that inexperienced special education teachers or mainstream teachers lacked the knowledge in managing the behaviour or emotion of students with dyslexia. Teachers' emotions are triggered by such a condition and they often end up stressed.

### 3.3. Strategies in teaching students with Dyslexia

Based on the study, the participants employed various strategies in teaching students with dyslexia. It is including the incorporation of a multisensory approach and the adoption of assistive technology tools such as mobile learning applications and other strategies. Both teacher A and teacher B stated that the incorporation of a multisensory approach in the learning session represented an effective way to help students with dyslexia in learning.

*"I requested the students to build an alphabet using plasticine. I used different colour cardboards to represent syllables before teaching word blending. They are required to pronounce the word and simultaneously write the word in the colour cardboard until they can memorise the word."* (Teacher A)

*"By using the collage method to build up an alphabet, they will easily remember the alphabet."* (Teacher B)

This finding is in line with the previous studies carried out by Subramaniam and Nasir [25], Mazjud *et al.* [26], as well as Ambros and Cheong [27]. They reported on the effectiveness of the multisensory approach on improving literacy skills among learners with dyslexia. A possible explanation could be attributed to the multisensory approach leads to the formation of visual-auditory associations via kinaesthetic activities, thus making the learning process more meaningful [28].

All three teachers agreed that adopting assistive technology tools particularly mobile learning applications could greatly support students with dyslexia in learning. This finding accords with many published literature which reported that mobile learning applications can improve the literacy performance of students with dyslexia [22], [29], [30]. A possible explanation for this might be its ability to provide students with sources or tools that are suitable to their skill levels as well as attractive visual elements and auditory features. Nevertheless, all participants stressed that to date, there are no mobile learning applications based on the *Kurikulum Standard Sekolah Rendah* (KSSR) curriculum that can be downloaded.

*"Students with dyslexia require sound pronunciation when learn to read, and mobile learning application fulfils this requirement."* (Teacher A)

*"Mobile learning application has the function to teach phonemes or syllables with sound, which are the important element in learning to blend. The child prefers to listen to the sound. When the word is repeated many times, they can memorise the word (drilling strategy)."*

*Mobile learning application provides a fun learning environment and motivates them to have more curiosity to learn.*" (Teacher B)

*"Students with dyslexia can reinforce their learning content via practices in the mobile learning application."* (Teacher C)

Furthermore, Teacher C also recommended the use of a reading pen to assist students with dyslexia in reading the words or sentences. She addressed that students with dyslexia can trace back the words or sentences that were read by using the playback function on the reading pen. Hence, she suggested assistive technology tools should be integrated into educational settings to assist students with special educational needs and dyslexic in particular.

For students who are unable to differentiate b and d, Teacher A suggested using the mirror method and hand method. For the hand method, the left hand represents b and the right hand represents d and this method is more effective compared to the mirror method. However, these findings do not support the previous research [31]. It demonstrated that rotating the letters in their own axes (mirror method) in the Desembaralhando mobile application was facilitated the learners to recognize the visual difference of the letters such as d and b, q and p, a and e.

Teacher A also recommended the use of a ruler word divider in assisting them to write the words in a sentence with proper spacing. In addition, Teacher A suggested that letter or word spacing should be increased to reduce the visual crowding problems. Teacher A's idea is also similar with previous study [32]. For Teacher C, she recommended the application of 21st-century learning methods such as individual presentation in teaching students with dyslexia. With individual presentations, she can guide the students when they have the difficulty in pronouncing or reading the words. She also proposed the inclusion of video in learning sessions to stimulate the student's visual and auditory senses to boost their learning.

#### 4. CONCLUSION

This study provided vital insights about the experience of special education teachers in teaching students with dyslexia, the challenges faced during the lesson, and the strategies employed to overcome literacy difficulties faced by students with dyslexia. The analysis revealed that dyslexic students often encounter difficulties in phoneme-grapheme associations, sound blending, and segmentation, thus resulting in impaired reading, spelling, and writing skills. Lack of dyslexia training and resources are the main challenges faced by special education teachers. The participants opined that a multisensory approach should be incorporated into the learning session via a mobile learning application. This approach will be more effective in teaching students with dyslexia as it utilises many senses simultaneously.

This study provided vital information for like-minded researchers. Future studies should explore the perspective of special education teachers in teaching other subjects such as English Language, Mathematics, and Islamic Education. Additionally, quantitative studies with large sample size such as questionnaire surveys can be used to ensure a more comprehensive data collection.

#### ACKNOWLEDGEMENTS

This work was supported by grant from the UTM Prototype Research Grant (UTMPR) 2019, cost center: Q.J130000.2853.00L29.





#### REFERENCES

- [1] S. R. Omar and A. A. Sulaiman, "Implementation of inclusive education programme for Special Education Need students with learning disabilities in Malaysia," *International Journal of Civilizational Studies and Human Sciences*, vol. 1, no. 4, p. 87, 2018.
- [2] Special Education Section, "2014 typical education data," Kuala Lumpur, 2015.
- [3] I. Adubasim and J. Nganji, "Dyslexia-A Learning Difference," *Autism Open Access*, vol. 7, no. 1, pp. 1–4, 2017, doi: 10.4172/2165-7890.1000203.
- [4] A. Tsali and T. Alexiou, "Dyslexia and Reading Through Coloured Background in Greek Primary EFL Learning," *JAL*, vol. 31, pp. 84–107, 2016, doi: 10.26262/jal.v0i31.8293.
- [5] L. Lemperou, D. Chostelidou, and E. Griva, "Identifying the training needs of EFL teachers in teaching children with dyslexia," *Procedia - Social and Behavioral Sciences*, vol. 15, pp. 410–416, 2011, doi: 10.1016/j.sbspro.2011.03.113.
- [6] S. Ahmad, M. M. Ali, and K. Salehuddin, "ESL Teachers' Experience in Teaching Pupils with Dyslexia in Mainstream Classrooms," *Creative Education*, vol. 09, no. 14, pp. 2171–2182, 2018, doi: 10.4236/ce.2018.914158.
- [7] A. S. Alawadh, "Teachers Perceptions of the Challenges Related to Provision of Services for Learners with Specific Learning Difficulties (Dyslexia) in Kuwaiti Government Primary Schools," University of York, pp. 1–304, Dec. 2016.
- [8] S. C. Basu, Poonam, and A. Beniwal, "A Study to Find the Challenges Faced by Teachers in the Class of Child with Dyslexia," *Learning Community-An International Journal of Educational and Social Development*, vol. 5, no. 1, p. 51, 2014, doi: 10.5958/2231-458x.2014.00470.9.




- [9] L. W. Lee, Manisah Mohd Ali, and Norani Salleh, "A glimpse of Malaysian Teachers' Reading Intervention Strategies for children with dyslexia," *Jurnal Pendidikan dan Pendidikan*, vol. 23, no. 1, pp. 151–162, 2008.
- [10] V. Subramaniam and N. H. Che Mat, "The Mastery of the 3m among Dyslexia Children based on the Revised Dyslexia List Instrument Screening Test," *Global Journal of Human Social Science Linguistics & Education*, vol. 13, no. 14, pp. 41–47, 2013.
- [11] M. J. Snowling and M. Melby-Lervåg, "Oral language deficits in familial dyslexia: A meta-analysis and review," *Psychological Bulletin*, vol. 142, no. 5, pp. 498–545, 2016, doi: 10.1037/bul0000037.
- [12] V. Costenaro and A. Pesce, "Dyslexia and the Phonological Deficit Hypothesis Developing Phonological Awareness in Young English Language Learners," *ELLE*, vol. 1, no. 3, pp. 581–604, 2012, doi: 10.14277/2280-6792/38p.
- [13] F. R. Vellutino, J. M. Fletcher, M. J. Snowling, and D. M. Scanlon, "Specific reading disability (dyslexia): What have we learned in the past four decades?," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 45, no. 1, pp. 2–40, 2004, doi: 10.1046/j.0021-9630.2003.00305.x.
- [14] J. Stein, "What is developmental dyslexia?" *Brain Sciences*, vol. 8, no. 2, 2018, doi: 10.3390/brainsci8020026.
- [15] J. Stein, "Dyslexia: the Role of Vision and Visual Attention," *Current Developmental Disorders Reports*, vol. 1, no. 4, pp. 267–280, 2014, doi: 10.1007/s40474-014-0030-6.
- [16] F. Ramus *et al.*, "Theories of developmental dyslexia: Insights from a multiple case study of dyslexic adults," *Brain*, vol. 126, no. 4, pp. 841–865, 2003, doi: 10.1093/brain/awg076.
- [17] M. Hebert, D. M. Kearns, J. B. Hayes, P. Bazis, and S. Cooper, "Why children with dyslexia struggle with writing and how to help them," *Language, Speech, and Hearing Services in Schools*, vol. 49, no. 4, pp. 843–863, 2018, doi: 10.1044/2018\_LSHSS-DYSLC-18-0024.
- [18] O. Afonso, P. Suárez-Coalla, and F. Cuetos, "Spelling impairments in Spanish dyslexic adults," *Frontiers in Psychology*, vol. 6, no. March, 2015, doi: 10.3389/fpsyg.2015.00466.
- [19] J. R. Birsh, *Multisensory Teaching of Basic Language Skills: Theory and Practice*. Brookes Publishing Company, 2011.
- [20] S. H. Sahari and A. Johari, "Improving Reading Classes and Classroom Environment for Children with Reading Difficulties and Dyslexia Symptoms," *Procedia - Social and Behavioral Sciences*, vol. 38, pp. 100–107, 2012, doi: 10.1016/j.sbspro.2012.03.329.
- [21] F. J. Duff, C. Hulme, and M. J. Snowling, "Learning Disorders and Dyslexia," *Encyclopedia of Mental Health: Second Edition*, Academic Press, 2016, pp. 5–11, doi: 10.1016/B978-0-12-397045-9.00062-8.
- [22] N. H. Borhan *et al.*, "An enhancement of dyslexic mobile application using sight word reading strategy: Results and findings," *Journal of Computer Science*, vol. 14, no. 7, pp. 919–929, 2018, doi: 10.3844/jcssp.2018.919.929.
- [23] N. Abdul Ghani, Z. Anisah Mohamad, and C. W. T. C. W. Abu Bakar, "Teachers' challenges in educating special children in special classes of three selected primary schools, Kuala Terengganu, Terengganu, Malaysia," *American-Eurasian Journal of Sustainable Agriculture*, vol. 7, no. 4, pp. 397–404, 2013.
- [24] N. A. M. Yuzaidey, N. C. Din, M. Ahmad, N. Ibrahim, R. A. Razak, and D. Harun, "Interventions for children with dyslexia: A review on current intervention methods," *Medical Journal of Malaysia*, vol. 73, no. 5, pp. 311–320, 2018, doi: 10.13140/RG.2.2.30068.04483.
- [25] V. Subramaniam and N. S. A. Nasir, "Multisensory Therapy in Letter Reversal of Dyslexic Pupils," *Universal Journal of Educational Research*, vol. 8, no. 12, pp. 7118–7130, 2020, doi: 10.13189/ujer.2020.081279.
- [26] R. M. Majzub, M. A. Abdullah, and Z. Aziz, "Effects of a multisensory programme on dyslexic students: Identification and mastery of the alphabet," *Research Journal of Applied Sciences*, vol. 7, no. 7, pp. 340–343, 2012, doi: 10.3923/rjas.2012.340.343.
- [27] P. P. Ambrose and L. S. Cheong, "Effects of the Clay Modeling Program on the reading behavior of children with dyslexia: A Malaysian case study," *Asia-Pacific Education Researcher*, vol. 20, no. 3, pp. 456–468, 2011.
- [28] S. Nourbakhsh, M. Mansor, M. Baba, and Z. Madon, "The Effects of Multisensory Method and Cognitive Skills Training on Perceptual Performance and Reading Ability among Dyslexic Students in Tehran-Iran," *International Journal of Psychological Studies*, vol. 5, no. 2, 2013, doi: 10.5539/ijps.v5n2p92.
- [29] N. Rahim and Z. Jamaludin, "Write-Rite: Enhancing Handwriting Proficiency of Children With Dysgraphia," *Journal of Information and Communication Technology*, vol. 18, no. 3, 2019, doi: 10.32890/jict2019.18.3.8290.
- [30] K. A. Rajagopal, "'Spell it Up!' Mobile Application (App) for Improving Spelling Skills among the Dyslexic Students," *Proceedings of International Conference on The Future of Education IConFed*, 2018, pp. 15–30.
- [31] L. Cidrim, P. H. M. Braga, and F. Madeiro, "Desembaralhando: a mobile application for intervention in the problem of dyslexic children mirror writing," *Revista CEFAC*, vol. 20, no. 1, pp. 13–20, 2018, doi: 10.1590/1982-0216201820111917.
- [32] S. Bertoni, S. Franceschini, L. Ronconi, S. Gori, and A. Facchetti, "Is excessive visual crowding causally linked to developmental dyslexia?" *Neuropsychologia*, vol. 130, pp. 107–117, 2019, doi: 10.1016/j.neuropsychologia.2019.04.018.

## BIOGRAPHIES OF AUTHORS






**Lim Wai Wai**     is a postgraduate student doctoral who is currently taking Education Psychology in Universiti Teknologi Malaysia (UTM). She participated in some research competitions such as New Academia Learning Innovation (NALI) 2020, Exhibition and Competition Industrial Art and Technology Exhibition (INATEX) 2020 & 2022. Besides, she also presented her research articles in conferences such as ASIA International Conference (2018). She can be contacted at email: candy\_lww@yahoo.com.



**Yeo Kee Jiar**    is a professor of Educational Psychology at the Universiti Teknologi Malaysia, Johor Bahru, Malaysia. She has more than 30 years of teaching experience in school, college and university. Her field of specialization, research areas, publication and presentation cover a wide range of educational psychology related aspects. Among these are early childhood education; special education; Smartphone usage; early reading and language learning; teaching methods, parenting; psychosocial, cognitive and affective areas in learning. She can be contacted at email: [kjyeo@utm.my](mailto:kjyeo@utm.my).



**Lina Handayani**    is a senior lecturer in the field of health education and promotion at the Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia. She has more than 18 years of teaching experience in the university. Her field of specialization, research areas, publication and presentation cover a wide range of health education and promotion related aspects. Among these are breastfeeding promotion and education; health behavior; technology and behavior; and parenting. She can be contacted at email: [lina.handayani@ikm.uad.ac.id](mailto:lina.handayani@ikm.uad.ac.id).