UNITE SpLD 2019 CONFERENCE

Uniting Ideas in Teaching Excellence:
Specific Learning Differences 2018

27 to 28 June 2019

Lifelong Learning Institute
11 Eunos Rd 8, Singapore 408601

The UnITE SpLD Conference seeks to bring together parents, teachers and practitioners working with children with specific learning difficulties and special educational needs. This conference will be showcasing research that covers aspects of behavioural, literacy and social emotional support, intervention and assessment for children with special learning needs. Come and listen to our SpLD experts share their research. Research will be presented it short, engaging and entertaining sessions accompanied by poster presentations and the chance to talk directly with researchers who are making a difference in the Asian region.

Asia Pacific Journal of Developmental Differences
Vol. 6, No. 1, July 2018

Keynote Presentation—Conference Day 1—27June 2019

Lifting the Bottom - Helping the Disadvantaged

Geetha Shantha Ram[1*]

1. *Dyslexia Association of Singapore*

Abstract

As we continue to explore ways to empower learners and families impacted by learning disabilities, one group in particular perhaps warrants our special attention. Around the world, a significant discourse on poverty and learning disabilities centres on identification woes with a central focus on understanding how the quality of life of families of children with learning disabilities is impacted by a reduced economic status. In 2015, it was reported that a third of the American population lived below the poverty line. While Singapore does not have a clear poverty line, The Borgen Project reports that between 2012 and 2015, the number of families receiving financial assistance in Singapore grew to 43.45 percent, which is the highest poverty rate ever reported in the country. Undeniably, there are amongst the people with learning disabilities.

Are those in greatest need of support and intervention the least likely to receive help due to their social economic status? The Dyslexia Association of Singapore, through the support of the Ministry of Education (Singapore), provides bursaries for more than 50% of the students on the Main Literacy Programme so that they may receive intervention to overcome their dyslexia challenges and the demands for these bursaries continue to grow. Is being learning disabled and of less-resourced a double disadvantage? Are there areas in which learners and families dealing with dyslexia are further impacted due to their low socioeconomic status. This presentation explores the challenges of being learning disabled and poorly resourced through a look at the learners in the DAS and their experiences and how Singapore and the DAS hope to address this concern.
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Keywords: Bursaries, Financial Support, Low Socioeconomic status, SpLD, dyslexia

* *Correspondence to:*
Geetha Shantha Ram, Director of SpLD Assessment Services, English Language & Literacy Division , Staff Professional Development, Dyslexia Association of Singapore, Email: geetha@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol. 6, No. 2, July 2019

Keynote Presentation—Conference Day 1—27 June 2019

Assistive Technology Enabling Learners

Jim Lee[1*]

1. *Google, Singapore*

Abstract

According to the World Health Organization, more than 1 billion people need one or more assistive products including assistive technology. This figure doubles to 2 billion by 2030. Considering Google's mission is to organize the world's information and make it universally accessible and useful, what is Google doing to help these people?

Technology offers people with accessibility needs a set of tools such as computers, mobile phones, and the Internet to enable learning. Google has dedicated teams and engineers who identify accessibility needs then develop tools and features to help fulfill those needs. These needs are categorized into five types: Vision, Movement, Hearing, Memory and Cognition. This presentation will provide an overview of some of the tools Google has developed and made available to address such accessibility needs.

Keywords: Assistive Technology, Learning Differences

* *Correspondence to:*
Jim Lee, Senior Lead, Google and Executive Committee Member of the Dyslexia Association of Singapore
Email: info@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Using Progress Monitoring Data to Measure the Performance of Singaporean Primary School Students with Dyslexia in the English Exam Skills Programme.

Siti Asjamiah Bine Asmuri [1*] and Andy Wang Ding Xiong[1]

1. *Dyslexia Association of Singapore*

Abstract

The English Exam Skills Programme (EESP) was started in 2013 with the goal of helping Singaporean primary school students with dyslexia achieve in their school and national examinations. Previous studies (Leong, 2015; Leong, Asjamiah & Wang, 2017; Abdul Razak, See, Tan & Leong, 2018) have demonstrated that students who enrolled in the EESP showed improved performance. However, students' performance measured against the duration of their enrolment in the programme were not recorded in these earlier studies. Hence, the performance of three different groups of students who enrolled in the programme at different stages was examined using a one-way ANOVA. Progress of students who have been in the programme for 10 weeks was compared with those who have been in the programme for 20-weeks and 30-weeks. Students who have been in the programme for a period of over 30 weeks demonstrated better retention and application of concepts. Therefore, progress monitoring data informs us that the full level of effectiveness demands longer exposure to the programme.
learning.

Keywords: Standard stream, Foundation stream, Entry test, Annual test, Synthesis & Transformation, Editing, Comprehension

* *Correspondence to:*
Siti Asjamiah Binte Asmuri, Senior Educational Therapist—Dyslexia Association of Singapore, siti.asjamiah@das.org.sg,
Andy Want Ding Xiong, Senior Educational Therapist—Dyslexia Association of Singapore, andy@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Dyslexia And The Imagery-Language Connection: Theory, Research, Practice

Angelica Benson[1*]

1. *Lindamood-Bell, United States of America*

Abstract

Based on over 30 years of instructional experience with 45,000 at-risk readers, we know that the imagery-language connection is critical to language comprehension and word reading (Lindamood-Bell Learning Processes, 2017). Imagery is a basic sensory-cognitive function connecting us to the language we hear and the print we read. There are two types of imagery—symbol and concept—intrinsic to word reading, orthographic processing, and reading comprehension. This presentation examines the effect of imagery-based, sensory-cognitive instruction on word reading and comprehension in children with reading difficulties, including those previously diagnosed with dyslexia. A consistent, repeated finding is that students with reading difficulties have shown significant word reading and comprehension improvements with imagery-based sensory-cognitive instruction. These results are observed in an analysis of students' pre-post data disaggregated by the United Kingdom, the United States, and Australia. Neurological research further validates the imagery-language connection resulting in lasting effects on word attack, word recognition, comprehension and specific areas of brain function in students with dyslexia (Eden et al., 2004, Oulade et al., 2013, Krafnick et al., 2015, Murdaugh et al., 2015, Murdaugh & Maximo et al., 2015, Christodoulou et al., 2015, Romeo et al., 2017, Huber et al., 2018). Supported by Dual Coding Theory (Paivio, 1979), key research findings, and 33 years of instructional experience, this session reveals that imagery is a primary sensory-cognitive power source that can be developed and brought to consciousness for reading independence in children, including struggling readers, and those previously diagnosed with dyslexia.

Keywords: Sensory-Cognitive Instruction, Imagery-Language Connection, Reading Intervention, Symbol Imagery, Concept Imagery

Also Presented as a Poster

* *Correspondence to:*
Angelica Benson, Director of International Development for Lindamood-Bell Email: angelica.benson@lindamoodbell.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Breaking Down Barriers: Dyslexia & Accommodations.

David Campbell[1*]

1. Scanning Pens Australia

Abstract

Reading is difficult for dyslexics to master, whilst test taking often presents an almost impossible barrier to overcome. David discusses empowering students with smart reader pens to do both.

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Keywords: Assistive Technology, Scanning, Smart Pens, Reader Pen, Exam Reader

** Correspondence to:*
David Campbell, Manager Scanning Pens, Australia. Email: david@scanning pens.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Madras Dyslexia Association (MDA) - a 25 years journey

D Chandrasekhar[1]* and Lata Vasanthakumar[1]

1. *Madras Dyslexia Association, India*

Abstract

Many a child with Specific Learning Difficulty (SLD) has gone unattended in the "golden years" of primary classes. This impacts not just the academics but also their social well-being. While the academic gap continues to widen, the child's self-esteem slides down steeply. They also run the risk of turning into social delinquents. Timely identification and providing remedial strategies within the classroom is not just a "band-aid"; it is scaffolding that helps the child optimize his or her academic potential. But how does one reach this support SOS to as many children as possible? This presentation campaigns for empowering the Primary School Teachers to be the first point of succour for children with SLD. This strong recommendation arises from the paradigm –"early intervention in classrooms is the ideal solution" First, the paper discusses the rationale underlying the concerted effort to take remediation to mainstream teachers. Then, it delineates the structured path to provide support to children with dyslexia, irrespective of the barriers of physical distance from large cities, economic strata, school affiliation or family educational background. Next, the paper describes how Madras Dyslexia Association garnered the required infrastructural and government collaboration to reach-out so far and wide. The training programs conducted by MDA are addressing approximately 12,500 teachers in one calendar year, impacting several thousand children. The impact of the activity, lessons learned and best practices are discussed through case studies. Then the paper sketches out the role of the ubiquitous technology in different aspects of the training process. Technology-based planning, monitoring, implementing and collaborating makes it feasible to keep together the growing community of empowered teachers, stakeholders, and facilitators. The lessons learned are ploughed back into the system to improve the remedial support being given to a child with SLD. Analysis of the data exhibits that this process is growing from strength to strength. Finally, it presents evidence that this scalable solution empowers the education system of a vast and dense country like India to provide a ray of hope to dyslexics studying even in public schools to run on minimum budgetary allowances. It can be one of the effective ways to narrow the academic gap and ameliorate the positives outcomes for children who are likely to miss the opportunities to receive remedial support due to different socio-economic barriers.

Keywords: Training program, Empowering Mainstream Primary School Teachers, Class Room Remedial Strategies, inclusive route to reaching out

* *Correspondence to:*
D.Chandrasekhar, Founder of Madras Dyslexia Association and Multiple Intelligences Foundation.
Email: deecee.d@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Engaging parents of students with dyslexia in the school-based dyslexia remediation programme.

Fiona Cheam[1*] and Lim Pei Ling[1]

1. Ministry of Education, Singapore

Abstract

Research has shown that parent involvement is positively associated with children's attitudes towards education and school attendance, and therefore academic achievement. For students with persistent literacy difficulties, various studies demonstrate that parental involvement has a significant effect on the child's literacy development. This presentation will describe MOE's efforts to facilitate parental involvement in supporting children with dyslexia through structured home-based activities. The rationale for the project, the resources and training developed for parents, and the outcomes of the project will be discussed.

Keywords: dyslexia, parent engagement, reading support

* *Correspondence to:*
Dr Fiona Cheam, Lead Educational Psychologist, Ministry of Education, Singapore. Email: Fiona_cheam@moe.gov.sg
Ms Lim Pei Ling, Registered Educational Psychologist , Ministry of Education Singapore, Email: lim_Pei_ling@moe.edu.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Perspectives of Mainstream Students with Special Educational Needs on Inclusion

Siti Mariam Binte Daud[1*]

1. *Dyslexia Association of Singapore*

Abstract

The increase in the number of students with special educational needs (SEN) studying in mainstream schools has largely been influenced by international developments in inclusive education practices. This has led to strong advocacy for the inclusion of these students in local mainstream schools. Despite increased support and resources to implement inclusion and inclusive education practices, there has not been a substantial investigation into how these practices are perceived by local students with SEN. This research project seeks to examine the perspectives of students with SEN on the inclusion and inclusive education practices in their regular mainstream schools and classes. A qualitative approach was used to generate data through questionnaires and semi-structured interviews with students with SEN who were attending literacy intervention lessons in a local SEN organisation. A thematic analysis coding system was employed in analysing the transcribed data. Students' perspectives were organised in results according to a framework based on three guiding questions:

1) To what extent do students with SEN feel included (or excluded) in their schools and classrooms, i.e. during both academic and social situations?; and
2) What academic or social-emotional barriers do they face that may affect their perspectives of the inclusion or inclusive education practices in their mainstream schools and classrooms; and
3) How can these barriers be overcome? The findings indicate that students had both positive and negative perspectives on the following themes that emerged: Teachers' attitudes, the school system, academic support, and peer support. Barriers related to the themes were also identified with recommendations as to how these can be overcome. These recommendations include a need to develop teachers' attitudes, to explore later school start times, to regulate homework assignment and to promote a culture of respect in the classroom. Future research could look at expanding the criteria of the sample group and supplementing questionnaires and semi-structured interviews with field observations.

Keywords: Inclusion; Inclusive practice; SEN .

* *Correspondence to:*
Siti Mariam Binte Daud, Senior Educational Therapist, Dyslexia Association of Singapore and Associate Lecturer for the DAS Academy Email: Mariam@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Level of Understanding of Dyslexia Among Indonesian Professionals, Teachers, and Society

Kristiantini Dewi[1*] and Purboyo Solek[1]

1. *Indonesian Dyslexia Association*

Abstract

This study is a simple survey upon the understanding the level of Indonesian people regarding dyslexia done within 17 months started in May 2017, using Google form questionnaires. Total respondents were 2036 persons, coming from various islands of Indonesia. Most of them were teachers, female, aged ranged 30-39 years old, bachelor degree. Approximately 13,6% of respondents believed that dyslexia had low IQ and therefore they would put dyslexic students in a special class set for low IQ students. Nearly 1343 respondents knew that dyslexia is a genetic-based condition, while the rest thought that it was due to poor parenting, poor teaching, impairment of spine, and TV/ Gadget exposure. Nearly one-fifth of respondents believed that poor diet, finger hypotonic and impairment of spine were the underlying medical problems in dyslexia. Most of the respondents (84.4%) knew that dyslexia often has comorbid, and 62,4% believed that the comorbidities were Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). While the rest believed that dyslexia may occur with Intellectual Disability, Autism, Spine Impairment, and Speech Delayed. Most of the respondent (72,5%) still believed in fancy treatment for dyslexia which was Sensory Integration Therapy (44,6%), diet, hiking, riding dolphins, coloured lenses, while only 27,5% understood that dyslexia needs remedial intervention. Most of the respondents (88.8%) agreed that dyslexia could be identified early, nevertheless quarter of respondents still believed that early intervention would heal dyslexia. Conclusion: The level of understanding of dyslexia among Indonesian people across professional backgrounds are still very poor. Further education to those professionals is a must.

Keywords: dyslexia, teacher, professional, Indonesian people
Also Presented as a Poster

* *Correspondence to:*
Krisiantini Dewi, Chairman of the Indonesian Dyslexia Association. Email: kristiantinidewi@gmail.com
Purboyo Solek, Consultant Child Neurology, Section of Child Health, Faculty of Medicine UNPAD Email: purboyosolek@yahoo.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Revisiting the Cerebellar Deficit and Phonology: An Explanatory Theory.

Angela Fawcett[1*]

1. *Dyslexia Association of Singapore*

Abstract

For many years, our claims that the cerebellum was involved in dyslexia were largely dismissed by established researchers, because there seemed to be no clear link with regions traditionally associated with dyslexia. In this talk, I revisit our cerebellar hypothesis, in the light of new evidence that has revealed for the first time the underlying mechanisms. In an exciting study, US authors (September, 2018) have determined that the cerebellum is implicated in reading by connections with the phonological and semantic circuits, as well as orthographic processing for both familiar and unfamiliar words. These findings confirm all the earlier theoretical research from our group, including automaticity, conscious compensation and procedural learning. Most importantly these insights have strong implications for educational support and confirm our long-standing belief that a broad approach targeting the whole child is likely to be the most effective and cost-effective overall. In terms of assessment, it is important to check for speed of performance, as well as accuracy, using Rapid naming tests, measuring writing fluency and simple motor speed, as well as executive function, and non-word reading tests. Further implications for intervention will be discussed.

Keywords: Cerebellar deficit, phonology, orthography, semantic route, educational implications

* *Correspondence to:*
Angela Fawcett, Editor-in-chief Asia Pacific Journal of Developmental Differences, Research Consultant, Dyslexia Association of Singapore. Email: angela@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Succeeding Against the Odds With Undiagnosed Dyslexia

David Fawcett[1*]

1. *Regional Sales Manager, Honeywell Controls, United Kingdom*

Abstract

In this talk, David will present some of the insights gained from his many years of involvement in the field of dyslexia, driven by his personal experience of failure in school, leading onto success in adult life. Despite the lack of support that he received in education, he was able to emerge triumphant, with the support of family and key figures in employment. He will share the misery of undiagnosed dyslexia, and of seeing the same pattern emerging in his son Matt. Above all, he will highlight the joy of finding that he is not stupid at all, but of superior intelligence. He will reveal some of the strategies that he has developed to help him achieve success. Finally, insights from Positive dyslexia on how to ensure all dyslexics can be successful will be shared, with something for everyone, including parents, teachers, and dyslexics themselves to learn from these experiences.

Keywords: Intelligence, strategies, positive dyslexia

* *Correspondence to:*
David Fawcett, Regional Sales Manager, Honeywell Controls, United Kingdom Email: prof.angelafawcett@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Educational Therapists' Perceptions towards an Enhanced Reading Comprehension Curriculum

Fong Pei Yi[1*] and Chua Minqi[1]

1. *Dyslexia Association of Singapore*

Abstract

An enhanced reading comprehension curriculum was developed and implemented at the Dyslexia Association of Singapore (DAS), as part of their specialist literacy intervention programme for individuals with dyslexia. Given that teachers' perceptions have long been associated with the successful implementation of the curriculum in various content areas, opinions of the enhanced curriculum from the DAS educational therapists could inform the future improvements to the curriculum.

Sixty-six educational therapists from the DAS were surveyed to get their opinions on the enhanced reading comprehension curriculum and the materials provided. Preliminary analyses suggest that 65-89% of the educational therapists found the enhanced curriculum to be useful and relevant to the teaching of reading comprehension, as well as relevant to their students' school curriculum. Most also expressed confidence in using the enhanced curriculum. However, only 56% of the educational therapists found the enhanced curriculum comprehensive and easier to implement compared to the previous curriculum. Educational therapists also voiced varied opinions on the need for changes to the teaching materials provided for the enhanced curriculum. Further analyses will be conducted and presented, along with recommendations for further research and enhancements to the reading comprehension curriculum.

Keywords: Teacher Perceptions, Curriculum, Reading Comprehension, Dyslexia

* *Correspondence to:*
Fong Pei Yi , Specialist Psychologist, Dyslexia Association of Singapore. Email: peiye@das.org.sg
Chua Minqi, Specialist Psychologist, Dyslexia Association of Singapore. Email: minqi@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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The Power of Morphological Awareness Instruction: Developing Greater Access to Unfamiliar Words for All Students

Sylvia Foo[1*]

1. *DAS Academy*

Abstract

According to Apel (2014), morphological awareness includes awareness of the meaning of affixes and how they change the meaning and grammatical class of base words/roots, and the relation between base words/roots and the words that can be derived from them. Research shows morphological awareness strongly impacts success in reading, writing and spelling (e.g. Apel & Lawrence, 2011; Nagy et al., 2006; Wolter et al., 2009). Goodwin & Ahn's (2010) meta-analysis of 17 studies found that morphological awareness instruction benefited students with reading, learning, or speech and language disabilities. Morphological awareness instruction is also found to mediate and facilitate vocabulary acquisition, which in turn facilitates reading comprehension (Bowers & Kirby, 2010; Carlisle, 2010; Guo et al., 2011). Morphologically complex words make up 60% of the English academic vocabulary found in school reading comprehension passages (Nagy & Anderson, 1984). Vocabulary seems to be the most persistent challenge affecting second language reading comprehension (Farnia & Geva, 2011). ESL students with or without SpLDs may therefore benefit from morphological awareness instruction to increase their access to word meanings for better reading comprehension. This workshop will introduce and practise morphological awareness activities that can be carried out for students with or without learning difficulties to enhance their access to unfamiliar words. The morphological awareness activities will be based on the work of various researchers (e.g. Bowers, 2012; Goldup, 2010; Apel & Werfel, 2014; Ebbers, 2017; Wolter & Collins, 2017).

The workshop will follow this structure: What is Morphological Awareness? Why is Morphological Awareness important (References will be made to SpLD and ESL contexts). Morphological Awareness activities that can be done in a small group as part of intervention or adapted to mainstream classrooms e.g. Word Sorts, Word Segmentation, Word Building. Word Hunts and Word Relatives.

Keywords: Morphological awareness, written language, reading, spelling, instructional approaches

** Correspondence to:*
Sylvia Foo, Senior Lecturer, DAS Academy . Email: sylvia@dasacademy.edu.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Word retrieval abilities in Japanese children with developmental dyslexia. Report based on use of picture naming tasks

Takashi Gotoh[1*] and Akira Uno[2,3]

1. *Mejiro University, Japan*
2. *Tsukuba University, Japan*
3. *Dyslexia Association of Japan*

Abstract

Developmental dyslexia is assumed to be partially caused by word sound retrieval difficulty. We analyzed the word sound retrieval abilities inaccuracy in Japanese children with developmental dyslexia with and without developmental language disorder using picture naming tasks. The participants in this study were 28 children with developmental dyslexia (9 with and 19 without specific language impairment; SLI) and 18 children with typical development. All groups were matched for chronological age; 9 children with developmental dyslexia with SLI was 10.8±1.8 years, 19 children with developmental dyslexia without SLI was 10.7±1.6 years and 18 children with typical development were 10.4±1.9 years. We evaluated the number of correct responses of picture naming tasks using 10 colors and 100 objects.

Picture naming stimuli were selected from the Test of Lexical Processing in Aphasia (TLPA), Standard Language Test of Aphasia (SLTA) and Supplementary Tests for Standard Language Test of Aphasia (SLTA-ST). Children with developmental dyslexia and SLI showed lower scores in picture naming tasks than those in children with typical development and with developmental dyslexia alone. Children with only developmental dyslexia manifested scores in the normal range. Our results suggest that picture naming connects with spoken language development and Japanese children with developmental dyslexia without developmental language disorder have no problem in word sound retrieval accuracy.

Keywords: developmental dyslexia, specific language impairment, picture naming task, vocabulary

* *Correspondence to:*
Takashi Gotoh PhD. Assistant professor of Mejiro University, Email: goto@mejiro.ac.jp
Akira Uno PhD. University of Tsukuba & President of Japan Dyslexia Research Association (JDRA) E: uno_akira@hotmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Phonological Awareness and Phonics Instruction: Inclusive practice that benefits all kinds of learners

Masarrat Khan[1*] and Rameeza Khan[2]

1. *Maharashtra Dyslexia Association (MDA), India*
2. *Head of Special Needs, Mumbai, India*

Abstract

There is an impressive array of studies showing that a measure of phonological awareness in preschool children is a good predictor of their reading achievement in early elementary grades. Phonological Awareness provides children with skills to become independent readers as well as good spellers. Phonemic Awareness is the ability to focus on and manipulate phonemes in spoken words. Phonics instruction is systematic when all of the major letter-sound correspondences are taught and are covered in a clearly defined sequence. Poor phonological awareness leads to difficulties with decoding, which is seen as a critical factor in successful literacy development. Structured Literacy, which prepares students to decode words in an explicit and systematic manner, not only helps students with dyslexia, but there is substantial evidence that it is more effective for all readers. As phonological processing deficits are a hallmark of dyslexia, children with dyslexia require direct phonological awareness and explicit and systematic phonics instruction to learn to read and spell efficiently. Research shows English as second Language Learners benefit from direct instruction in phonological awareness and systematic phonics instruction along with alphabetic knowledge. Studies have also stressed the beneficial role of phonological training on the reading abilities of children who come from low-income families.

Through this paper, various phonological awareness activities will be discussed to highlight their importance, and how teachers can tweak their teaching practice to incorporate these activities effectively in an inclusive set-up will be shown.

Keywords: Phonological Awareness, Phonics, Inclusive practice

* *Correspondence to:*
Masarrat Khan, CEO, Maharashtra Dyslexia Association (MDA) E: masarrat@dyslexiaindia.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Inclusion of Students with Learning Differences

Rameeza Khan[1]

1. *Head of Special Needs, Mumbai, India*

Abstract

A mainstream day-cum-boarding girls' school in a city in India, following the Indian Certificate of Secondary Education curriculum, caters to 1000 students out of which 120 are boarders. Most of the boarders come from economically backward homes, some of whom are first generation learners. Amongst them are students with Language Difficulties and Specific Learning Disorders too. The Special Needs Department comprising of four Special Educators and three Counsellors helps around 120 boarders and 50 day-scholars with academic, emotional and behavior concerns every year. Students receive remediation in reading, spelling and comprehension skills on a regular basis. The language development program conducted for all the boarders helps in successful inclusion. Life-skills programs are conducted in the mainstream classes once a week. Depending on the needs of the students, accommodations such as extra time, oral evaluation, big font, condoning spelling errors, calculator, reader and writer are offered to students with learning differences. There is substantial evidence that structured literacy programs, in addition to helping students with dyslexia, are effective for all kinds of learners. Hence, a major step towards inclusion began two years back when, in Kindergarten, the school introduced Phonological Awareness and Phonics along with evidence-based Cursive Handwriting and Multisensory Mathematics programs. The various programs and activities, offered in school, help our students with learning differences perform at par with their peers. Thus, the school's unique inclusive approach and team work helps students with learning differences to graduate from school with confidence and flying colors.

Keywords: Inclusion, learning differences

* *Correspondence to:*
Rameeza Khan, Head of Special Needs Department, E: rameeza_rk@rediffmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Dyslexia Café – An Experiential Method of Disseminating Information about Dyslexia by setting up a Café

Swetha Krishna[1]

1. *Special Educator, Madras Dyslexia Association, Chennai, India*

Abstract

Learning Objectives:

1. To disseminate information about Dyslexia to the general public.
2. The general public is exposed to information about Dyslexia through experiential learning.
3. The general public is able to understand, at a basic level, difficulties a person with Dyslexia experiences in order to navigate the world, and is able to empathise with them.
4. Knowledge that, much of innovation and entrepreneurial success is because people with Dyslexia use their "unique abilities" in scientific inventions and business enterprise.

Awareness about Dyslexia and about how individuals with Dyslexia navigate the world around them; the struggle in their daily life; how they process information; reasons why they 'fail' repeatedly in reading and writing. This information is experienced hand-in-hand with the positive aspects of having Dyslexia. In this presentation, we will demonstrate how we were able to achieve this by setting up "Dyslexia Café" in collaboration with Writer's Café, a space largely popular with people in the 18 to 35-years age group. We further demonstrate our success in generating public interest and their understanding of Dyslexia by sharing videos; experiential "props" like Pop-quiz sheets, table-top information cards, bookmarks, cloth bags with Dyslexia messages, puppet show, book reading session. These activities will demonstrate how we were successful in achieving our goal of generating awareness about Dyslexia in the general population.

Keywords: Awareness to general population, experiential learning, positive aspects of

* *Correspondence to:*
Swetha Krishna. Special Educator, Madras Dyslexia Association, Chennai, India Email: naandaan@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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A Case Study: Buddy system to step-up social learning in an inclusive setting

Lee Wei Ling[1*] and Beverley Tan[1]

1. *Kindle Garden Preschool, Singapore*

Abstract

Often in a classroom, adults provide opportunities to support children's social engagements and these lead to sustained interactions with their peers. Better social engagement can lead to independent and empower children. In an inclusive classroom, teachers used a buddy system to support children's peer interaction. Two groups of children, aged between 3 and 5 years, were introduced to the buddy system. 30% of these children have at least one diagnosis such as global development delay, Autism, Down Syndrome, etc. Buddies were selected and assigned by teachers. These were also visually available and accessible to the children. Buddy system was embedded for transition, routine and table tasks. These included walking to and from toilets/rooms, seating arrangement, shower, packing bag, after nap, meal times, etc. The buddy system allows for children with mixed abilities to be partnered. Children were encouraged to seek their buddy's help for a variety of situations. Children were trained to identify opportunities to seek assistance. These led to increase opportunities for social communication in their natural setting. All children learnt strategies to seek help from peers. Through the buddy system, children learn to be more independent in various tasks and routines. The positive behavioural outcome from buddy system will be shared and the impact on the children's interaction will also be discussed.

Keywords: Buddy system, social learning

* *Correspondence to:*
Lee Wei Ling, Kindle Garden Preschool, Singapore Email: weiling_lee@awwa.org

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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A Curriculum-Based Approach: Bridging the Secondary School Chinese Learning Gap

Li Dong[1*] and Tan Ah Hong[2]

1. *Dyslexia Association of Singapore*
2. *National Institute of Education, Asian Languages and Cultures, Singapore*

Abstract

Chinese language learning at the secondary school level focuses on increasing the proficiency of students in their reading and writing abilities. Given the variety of text types as compared to what they have been exposed to at primary school level, a student who has a language learning difficulty would find learning Chinese in school an increasingly difficult task. To help students access the mainstream curriculum more readily, the Dyslexia Association took on a curriculum-based approach to help bridge the learning gap at the secondary school level. Teaching content is organised in themes to raise the language skills of listening, speaking, reading and writing. Progress of the students were tracked for two years using measures such as students' reflection, therapist's lesson log, assessment of taught content, literacy ability tests and lesson observations. The curriculum-based approach has effectively helped learners bridge the learning gap to access the mainstream curriculum, as well as maintain their interest for learning Chinese.

Keywords: Chinese, Dyslexia

* *Correspondence to:*
Li Dong, Senior Educational Therapist and Chinese Teacher, Dyslexia Association of Singapore. Email: lidong@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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How Teaching with Digital Tools Affect Motivation and Learning Outcome

Soofrina Binte Mubarak[1*] and Rebecca Lim[1]

1. *Dyslexia Association of Singapore*

Abstract

Increasing students' motivation has been one of the key areas that educational institutions work on to better engage students and yield results. It has also been increasingly important especially when working with learners with learning differences, such as dyslexia who usually experience the risk of being demotivated. Motivation is one of the factors that cause people to behave in certain ways. The students who spend the weekend in the library and the students who cannot wait to get out of class to go to the beach are both motivated, but they have different goals and interests. Of course, motivation is not the only factor in student performance. To perform well, a student must also have the right abilities and resources (Broussard, 2002). Without motivation, however, even the most capable working student with excellent support will accomplish little (Boggiano, 1991). There is also the greater sense that, with learner access to burgeoning online resources and with their increasing digital skills, educators are at a point where they ought to rethink their pedagogical approaches and so that students can take control of their own learning, in the direction of higher motivation and learning outcomes. This presentation will cover the following areas in an instructional design perspective: a) principles of technology-enabled learning models (Bloom's digital taxonomy, ADDIE model, Gagne's nine events of instruction and Merill's principles of instruction) b) learner differences and the implications for lesson design - which will provide examples and case studies from DAS MLP classrooms. Audience can thus expect theoretical as well as practical take-ways from this session.

Keywords: Technology, Digital tools, Digital Natives,

* *Correspondence to:*
Soofina Binte Muburak, Senior Educational Therapist and EdTech Coordinator, Dyslexia Association of Singapore.
Email: soofrina@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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RETA Case Management Discussion on Supporting adolescents with learning and behavioural issues at DAS

Hani Zohra Muhamad[1*]

1. *Dyslexia Association of Singapore*

Abstract

Adolescence, describes as the years between 13 and 19, can be a period of great challenge for many teenagers as they transit between childhood and adulthood. It is a period of multiple transitions which involve changes in physical, psychological, education, social interaction, interpersonal relationship and vocation aspects of human development. It can be made worse if the teenager is diagnosed with a learning disorder such as dyslexia , and a disruptive behavioural disorder such as Attention Deficit Hyperactivity Disorder (ADHD). A teenager who is already grappling with a learning condition and a behavioural issue can be easily frustrated as he/she deals with the complexities and challenges of "growing up". Therefore, identifying the problems faced by the teenager is crucial so that intervention strategies can be put in place in order for him/her to learn optimally, regulate his/her behaviour and emotions as well as act appropriately in any social context. Only then will the teenager be accepted by peers and society at large.
At the Dyslexia Association of Singapore (DAS), Educational Therapists (EdTs) with students who display challenging literacy and behavioural needs are supported by a group of Educational Advisors (EAs). These students are observed for their learning needs and strategies are implemented to mitigate their difficulties. Action plans and goals are set for the semester as a form of progress monitoring towards specific achievement. Case management discussions when done right, result in the most satisfying and comprehensive support for students and teachers, whose lives we aim to enrich and empower. With the benefit of a multidisciplinary team and their varied perspectives, we can plan, coordinate and review the care of our students.

Keywords: adolescents, psychosocial issues, dyslexia, co-morbidities

* *Correspondence to:*
Hani Zohra Muhamad, Lead Educational Therapist and Educational Advisor, Dyslexia Association of Singapore.
Email: hani@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Examining the cross-linguistic relations between early reading and writing for simultaneous bilingual children in English and their Mother Tongue language

Beth O'Brien[1*], Nicole C. Lim[1], Malikka Begum Habib Mohamed[1] and Nur Artika Binte Arshad[1]

1. *Centre for Research in Child Development, National Institute of Education, Singapore*

Abstract

There is a strong relationship between reading and writing skills as children begin to acquire literacy, likely because these skills share linguistic and cognitive resources, and experientially they often co-occur (Fitzgerald & Shanahan, 2000). This has been reported for the development of English skills, but these relations have not been investigated more broadly across orthographies. In this presentation, we contribute new information with regard to (a) reading-writing co-relations within different languages: Chinese, Malay and Tamil, (b) consideration of these relations over time longitudinally from the beginning phases of literacy, and (c) skills within simultaneously bilingual children learning to read and write in two languages at the same time. Specifically, we examine the cross-domain relations of reading and writing in each language, the cross-linguistic influence with English for reading and writing, and the latent structure of literacy across the different languages. Cross-lag analysis is used to examine children's reading and writing longitudinally from kindergarten 1 and 2 into primary 1. At kindergarten 2, we also assessed their literacy-related skills of metalinguistic awareness and receptive vocabulary, and analysed the contribution of these skills to literacy for English and the other languages.

Keywords: Bilingual children, Literacy, Read, Write, Mandarin, Malay, Tamil, English

* *Correspondence to:*
Dr Beth O'Brien, Senior Research Scientist, National Institute of Education, Nanyang Technological University, Singapore.
Email: beth.obrien@nie.edu.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Cognitive Abilities Related to Reading and Writing attainments in Chinese Third-graders

Jieping Ou[1*]

1. *University of Tsukuba, in Japan.*

Abstract

In this study, we investigated the characteristics of cognitive abilities as predictors of Chinese reading and writing. A total of 140 Chinese third-grade children in Ningbo, Zhejiang, China were assessed for their abilities to read and write Chinese, as well as their cognitive abilities and nonverbal intelligence. A series of reading and writing tests were conducted to evaluate the children's reading and writing attainments in Chinese. Moreover, Rey-Osterrieth Complex Figure Test, Rapid Automatized Naming, and The Standardized Comprehension Test of Abstract Words were conducted to examine children's visual cognition, naming speed and receptive vocabulary, respectively. Onset/rime deletion and non-words repetition tests were carried out to examine their phonological awareness and phonological memory. Children were devided into three group based on their reading or writing scores:low score group (LG), average group (AG) and high score group (HG). Results of Mann-Whitney U test indicated that the socre of phonological memory, naming speed, and visual cognition in HG is significantly higher than in LG. Results of multiple regression analyses revealed that visual cognition and phonological awareness were significant predictors for word and non-word reading, respectively. Naming speed showed a significant contribution to the rapid reading of words, non-words, and paragraphs. The results also indicated that the performance of word and non-word reading are factors for predicting writing test scores. Our findings suggested that visual cognitive

Keywords: Reading; Writing; Visual cognition; Phonological awareness; Naming speed

* *Correspondence to:*
Jieping Ou, University of Tsukuba, 1–1–1, Tennodai, Tsukuba, Ibaraki 305–8572, Japan. E-mail: s1830320@s.tsukuba.ac.jp

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Motor Dance Training: practical exercises to improve reading in dyslexia

Eleonora Palmieri [1*] and Piero Crispiani[2]

1. *Psychological and Pedagogical Victor Center Macerata, Italy*
2. *University of Macerata, Italy*

Abstract

The target is to improve multitasking performances stimulating cognitive and motor functions through the application of Motor Dance Training as a part of Cognitive Motor Training, based on the Crispiani Method. The training provides infinite variety of exercises with movements, rhythm and music and it can be easily applied in group activity or individually. Participants will be introduced to dancing training with practical exercises walking on the spot or forward and backward, sitting on the floor. The presenters, in front of the group, will assume the role of modelling. The Dance Motor Training help people with dyslexia to be active and well coordinated with a better self – esteem in a fun innovative way, achieving considerable improvements in reading.

Keywords: rhythm, music, multitasking, cognitive and motor functions

* *Correspondence to:*
Dr. Eleonora Palmieri is the Director of Psychological and Pedagogical Victor Center Macerata (Italy).
Email: palmieri.eleonora1@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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An Exploration of the Impact of Picture Book Illustrations on the Comprehension Skills, Vocabulary Development and Engagement Level of Children with Dyslexia

Deon Poh [1*]

1. *Dyslexia Association of Singapore*

Abstract

The main characteristics of dyslexia include difficulties in the accuracy and fluency in word recognition, word decoding and spelling. Due to the difficulties in the acquisition of these basic literacy skills, it may result in secondary difficulties like reading comprehension, writing and vocabulary development. Comprehension and vocabulary are essential components to acquire in developing literacy skills. Research has shown that the formal instruction of literacy skills to learners with dyslexia needs to incorporate highly structured and systematic teaching that uses multi-sensory methods to tap on their cognition and construction of knowledge. Learners, in our current society, experience pictures and images in almost everything they encounter. In educational settings, visual elements like pictures with text in textbooks, Smartboards and computer interfaces are prevalent. As such, incorporating visual literacy instruction (e.g., supplementing picture books with illustrations) into our educational process might aid in the development of literacy skills for learners with dyslexia. This current research sought to examine the impact of picture books on learners with dyslexia. One group of learners was exposed to the illustrations and another group of learners was not exposed to the illustrations were investigated on their comprehension through retelling and vocabulary development. This research also investigated these learners' engagement during picture book instructional sessions. Seven students (mean age = 10 years 9 months) diagnosed with dyslexia participated in this study The results showed that the group of learners who visually experienced the illustrations accompanying a picture book demonstrated moderate improvement in overall comprehension through retelling as opposed to the other group which was not exposed to the illustrations in the picture book storytelling sessions. The group which saw the illustrations also exhibited higher indirect vocabulary development than the other group who did not see the illustrations as the story was read to them. More significantly, the group which saw the illustrations displayed a higher level of engagement through observations of their physical characteristics during the sessions. The findings from this study have implications for the curriculum development at any educational settings who support learners with dyslexia to incorporate picture books into its literacy instruction.
Keywords: Picture books, illustration, comprehension, vocabulary, engagement, children with dyslexia

* *Correspondence to:*
Deon Poh, Centre Manager and Educational Therapist, Dyslexia Association of Singapore. Email: deon@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Development of Adaptive Experiential Learning via Interactive Contemporary Education with Virtual Reality (AELVICE)

Pong Ke Xin (Stella)[1*], Lau Jia Xian[1] and Wesley Tan Chee Wah[1]

1. *Nanyang Technological University, Singapore*

Abstract

Today, students with dyslexia are limited in their abilities as they can only practise public speaking within a small class size. The development of our Adaptive Experiential Learning via Interactive Contemporary Education with Virtual Reality (AELVICE) is a fresh educational approach which aims to assist dyslexic students in improving their presentation skills, by allowing them to experience presenting in a virtual room with a larger audience size and providing a safe learning environment. In this virtual environment, the learner will be guided on script reading, and be prompted if he/she is speaking too soft, and/or not having sufficient eye-contact with the audience. Research shows that perceived visual clutters render text illegible for dyslexic learners [1]. AELVICE here enables the customisation of scripts to be read word-by-word, thereby resolving visual clutter and addressing one of the biggest challenges dyslexic students face. Reducing visual clutter empowers dyslexic learners to improve both their presentation and reading skills [2]. An adaptive system will also be implemented, whereby the student will be given less guidance when the student becomes more confident.

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2. Martelli, M., Di Filippo, G., Spinelli, D., & Zoccolotti, P. (2009). Crowding, reading, and developmental dyslexia. Journal of Vision, 9 (14), 1–18.

Keywords: Adaptive learning, Contemporary Education, Dyslexia, Virtual Reality

Also Presented as a Poster

* *Correspondence to:*
Stella Pong Ke Xin, EEE Undergraduate (Infocommunications and Computer Engineering), Nanyang Technological University.
Email: pongo009@e.ntu.edu.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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The Face of Educational Well-Being: Mind full to Mindful

Harsheeni Rajoo[1*], Tarsheeni Rajoo[1] and Pratyusha Sridhar[1]

1. *Dyslexia Association of Singapore*

Abstract

Educators encounter high levels of occupational stress that result in burnout, poor teaching, and attrition. Equipping educators with resources to cope helps buffer against challenges. Effective resources include work climate, job social support, job autonomy, and skill discretion, and personal traits, such as self-efficacy and optimism (Bakker & Demerouti, 2007). The Staff Professional Development (SPD) Division at the Dyslexia Association of Singapore (DAS) supports our Educational Therapists (EdTs) with the expertise of our board of proficient Educational Advisors (EAs) - who along with ensuring seamless and consistent work quality assurance, strive to create a fulfilling experience for all our EdTs. More recently, the SPD Division has adopted CalmEd, a mindfulness-based well-being initiative, as part of enriching this support extended to our EdTs. Having established an understanding from a recent study on how mindfulness efficaciously impacts the euthenics of a group of EdTs, CalmEd kicked off its pilot project with our board of EAs to investigate further how else mindfulness-based approaches can bolster the well-being. Some of these approaches include sending weekly mindfulness reminders, encouraging deliberate mindfulness practices such as filling out the five-minute retrospect journal, breathing techniques, and even enjoying a nourishing snack. Mindfulness has been defined as, 'paying attention in a particular way: on purpose, in the present moment and non-judgmentally' (Kabat-Zinn,1994, P.4) A considerable body of evidence with adult populations indicates that mindfulness, a particular way of deploying attention and awareness in the present moment without emotional reaction or conceptual judgment, is instrumental in helping adults reduce stress, regulate emotion, and thereby improve their health and well-being (Carmody & Baer, 2008; Grossman, Niemann, Schmidt, & Walach, 2004). Research has shown that educators are more likely to experience occupational stress that results in occupational burnout (Wisniewski & Gargiulo, 1997). The results of this is usually a rise in teacher attrition. CalmEd is a mindfulness-based well-being initiative adopted by the Staff Professional Development (SPD) Division at the Dyslexia Association of Singapore (DAS) to ensure the well-being of educators while promoting a positive working environment. CalmEd is guided by mindfulness-based principles to help educators improve their overall well-being. This workshop aims to share the results of a case study on how mindfulness efficaciously impacts the euthenics of a group of Educational Therapists and an ongoing project with the Educational Advisors at the DAS.

Keywords: mindfulness, educators, well-being

* *Correspondence to:*
Harsheeni Rajoo, Educational Advisor, Dyslexia Association of Singapore, Email: harsheeni@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Technological scaffolding for reading- MDA- Avaz Reader, an assistive reading app

Harini Ramanujam[1*], and Mala Natarajan[1]

1. *Madras Dyslexia Association*

Abstract

"To learn to read is to light a fire" said Victor Hugo in Les Miserables. If this is so, then unfortunately many people with Specific Learning Difficulties are in darkness since fluent reading eludes them. While remedial teachers equip the child with coping strategies, continuous support during every instance of reading may not be possible. "MDA- Avaz Reader", the reading app provides this assistive framework. Based on well researched, time tested and successfully implemented practices, this easy to use app provides familiar reading strategies on demand for any textual material of interest in a personalized manner. These reinforcements work towards building and strengthening all the facets of reading i.e. decoding, fluency and comprehension. With sustained use of MDA-Avaz Reader, children who struggle with print become better at processing words and reading independently. Firstly the paper discusses the vital need for an app that provides assistance for reading- an indispensable life skill. The presentation then goes on to showcase the different features of the app-the visual appeal, seamless migration from print to digital content, choice of reinforcing reading strategies, customizability etc. It is a predominantly offline app, only some actions require online connectivity. The paper showcases the well-thought-out integration of this app with the teaching-learning process of a child with Specific Learning Difficulty. It then discusses the model adopted to make it economically viable for the developer to sustain progressive improvements in the features of the app, while ensuring it can be afforded by most people. Madras Dyslexia Association has been working closely with children and observing and measuring the gains from the usage of this app. The paper provides evidence through case studies on the academic, emotional and social impact of this app on its users (with Specific Learning Difficulty). MDA proposes to take this scalable and customizable assistive device to people with reading difficulties across different demographics, empowering them to read gainfully and independently. It is an educational resource and a productivity tool that people with reading difficulties need, to succeed.

Keywords: Assistive reader, app for reading, scale up fluency, scale up comprehension, reading strategies on demand, promotes independent reading

* *Correspondence to:*
Harini Ramanujam, Head of General Operations and Finance, Madras Dyslexia Association, India,
Email: hariniramanujammda@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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"Dyslexia is not a Backdoor"—Personal Dyslexia Story

Dayantara Priyo Santano[1*]

1. *Student, Jakarta, Indonesia*

Abstract

Jogjakarta is not a strange city to me. It cannot be counted on the fingers, how many times I've been visiting the city which is famous for its traditional food called 'Gudeg'. My visit this time was very different from the other trips before. Why? This trip is actually made for fulfilling my MYP project at school as one of the requirements of passing IB standards.

This project asked all students to make something that they liked but it had to be challenging. Writing a book is something that I find challenging regarding my dyslexic condition. But, travelling and photography is something that I like. Out of curiosity, I finally decided to make a trip down to the route of the Imaginary Line of Jogja which was very interesting to explore accompanied by two mentors on November 5th , 2016. Under the guidance of my supervisor, I made a pocketbook that guides people especially those with dyslexia throughout the journey of the Jogja imaginary line.

In producing the book, I was supported by my parents and a team of editor and graphic designer. This was my strategy to cope with what I think are the challenges in making a book. The process made me learn that we need other assistance to overcome our challenges and turn it into a new opportunity to develop ourselves. As a result, I have produced a pocketbook of journal as a reward of all the efforts that have been done.

Keywords: Traveller's Pocketbook: Jogja's Imaginary Line

* *Correspondence to:*
Dayantara Priyo Santano, Student, Jakarta, Indonesia Email: dayantara98@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Incorporating technology in comprehension instruction for preschool children

Shakthi Bavani Sathiasilan[1*] and Vera Tai[1]

1. *Dyslexia Association of Singapore*

Abstract

It is inevitable to incorporate technology into learning especially for preschoolers. Technology has the ability to enhance relationships between teacher, students and the process of learning as it keeps children engaged. Comprehension is the ability to read, understand and process language. Comprehension skills allow children to pick up vocabulary, improve their memory and gain the ability to acquire more advanced literacy skills. Poor comprehension in children jeopardises their ability to understand instructions, concepts and hence children face difficulties to apply what they have learned. Hence, pairing technology and comprehension instruction will definitely make intervention more motivating. For preschool children, comprehension skills can be built with and without reading texts. Technology can be used to enhance such skills in a multisensorial mode of learning. Computers, tablets and other forms of technology bring multiple resources such as apps and resources not typically available in books. Skills required for successful comprehension can be strengthened daily in fun and easy ways. The workshop will focus on the different methods to build a variety of literal and evaluative comprehension skills that will allow the preschool children we support to learn better. This workshop will provide examples and highlight available resources on how to incorporate and build comprehension skills into daily conversations, structured verbal communication, story-telling and reading activities based on different level of abilities, with technology.

Keywords: comprehension skills, comprehension instruction, preschool children, technology, kindergarten

* *Correspondence to:*
Shakthi Bavani Sathiasilan, Educational Therapist with the Dyslexia Association of Singapore Email: shakthi@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Assessing Language in Bilingual Children with Dyslexia

Seet Xian Hui[1*]

1. *Dyslexia Association of Singapore*

Abstract

Background: There have been inconsistencies in the literature on whether children with Developmental Dyslexia (DD) have grammatical deficits on top of their written language impairments (Altmann, Lombardino, & Puranik, 2008; Ramus, Marshall, Rosen, Lely, & Hall, 2013). In Singapore, the bilingual environment and influence of Singapore Colloquial English (SCE) have made it especially challenging to identify language difficulties. Objective: To obtain the morphosyntactic profile of children with DD, using a newly developed sentence repetition (SRep) test and to compare them to typically developing (TD) age peers. Method: 10 Primary 1-2 children (aged 6;9 – 8;5 years) with DD who are English-Mandarin bilingual and English-dominant, were matched on their age and non-verbal intelligence to a control group of 10 TD peers. The children were assessed on their non-verbal intelligence (Ravens Colored Progressive Matrices), verbal short-term (Digit Forward) and working memory (Digit Backward), as well as oral (CELF-4 UK Core Language subtests, BLAB English receptive vocabulary, SRep test) and written language abilities (WRAT-4 reading and spelling subtests). Results & Discussion: When compared to TD children, quantitative and qualitative analyses of performance on the SRep test revealed group differences in the overall score as well as number and type of errors, providing support for the view that there are underlying oral language deficits common in children with DD. A model reflecting the non-phonological deficits of children with DD was proposed. EBP Implications: This study identifies areas for intervention with children who have DD in Singapore, and provides evidence for the SRep test as a potentially useful oral language screener.

Keywords: dyslexia, developmental language disorder, bilingual, sentence repetition

* *Correspondence to:*
Seet Xian Hui, Speech Therapist, Dyslexia Association of Singapore Email: seet.xianhui@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Teaching Science using the inquiry-based learning approach (IBL) to primary school students with dyslexia

Kavitha Tiruchelvam[1*]

1. *Dyslexia Association of Singapore*

Abstract

Inquiry-based learning approach (IBL) describes a cluster of student-centred approaches to learning and teaching that are driven by inquiry or research. It empowers students, positioning them as active participants in their education and preparing them to work under their own initiative especially in a Science classroom. Teachers and students can use talk to work through their Science ideas and build co-constructed understandings of Science phenomena (Mortimer & Scott, 2013). However, unlike a narrative text, a Science text is an expository prose which includes different text structures and vocabulary (Gajria et al., 2007). This becomes a great struggle for students with dyslexia in their mainstream schools who have learning difficulties in reading and comprehending the text with specialized Science vocabulary. With the aim to provide support for our primary school students with dyslexia, both Science workshops and short-term programmes have been designed using the inquiry-based learning approach to teach Science at the Dyslexia Association of Singapore. During the Science lessons, these students were encouraged to explore, discover, investigate, evaluate and elaborate on Science as an experiential learning in their daily lives, society and environment.

Keywords: Dyslexia, Teaching Science, Inquiry-Based Learning

* *Correspondence to:*
Kavitha Tiruchelvam , Lead Educational Therapist and Programme Leader Science , Dyslexia Association of Singapore
Email: Kavitha@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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What does it mean to know a word?

Jasmine Tse[1*], Juzailah Amin[1] and Safina Bte Hassan[1]

1. *Dyslexia Association of Singapore*

Abstract

Students from the age 11-17 diagnosed with Dyslexia face difficulties reading a word that they are unfamiliar with and this makes understanding its meaning a problem. It gets even more challenging for them to be able to use the word accurately in the right context. This in turn hinders their ability to read with understanding, and to write with accuracy and precision.

Therefore, recognizing the challenges faced by these students is key in planning intervention strategies. A direct vocabulary instruction approach provides them with specific word instruction and word-learning strategies. Specific word instruction allows students to have an in-depth knowledge of word meanings. Practitioners working with students who possess a limited range of vocabulary need to understand what it truly means to know a word. A struggling reader would benefit from a direct instruction that considers the word forms, synonyms, antonyms, homonyms of a word. To deepen the learner's experience with a new vocabulary item, connotative meanings and nuances amongst synonyms should also be explored.

Multiple exposures to these words in different contexts provide many opportunities for them to use the new vocabulary expressively and receptively. Dyslexia learners benefit from an approach that is highly structured, with opportunities for repetition and reviews. The Marzano 6-Steps provide such an avenue for learners with dyslexia to build vocabulary that would support their advanced literacy skills.

This workshop will provide intervention strategies to help students use a word correctly using direct vocabulary instruction and this will build their writing and reading comprehension skills.

Keywords: Vocabulary

* *Correspondence to:*
Jasmine Tse, Educational Therapist and a Curriculum Developer, Dyslexia Association of Singapore
Email: jasmine.tse@das.org.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Experience Sharing of Mainland China on Dyslexia Intervention Mode and Service System

Wang Lei Ryan[1*]

1. *Shenzhen Sparkling Education, China*

Abstract

Although the intervention service for dyslexia in Mainland China started late, it has made remarkable achievements through the development of these years. Shenzhen Weining Dyslexia Education Centre as the representative of Mainland China's dyslexia service organizations has created a hierarchical intervention model and service system suitable for the Mainland of China according to the actual situation of simplified Chinese areas. Hierarchical intervention model includes public education, community and school support, family intervention and individual training. Meanwhile Shenzhen Weining Dyslexia Education Centre establishes a trinity service system of school, family and institution to give full play the role, power and wisdom of schools and parents.

Keywords: Chinese Dyslexia Service, hierarchical Intervention mode, three-in-one service platform System

* *Correspondence to:*
Ryan Wang, General Manager of Shenzhen Sparkling Education. Director of Shenzhen Weining Dyslexia Education Center
Email: 472212757@qq.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

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Difficulties in expressing numbers in words: A study on Grade four students with dyslexia in Singapore

Rebecca Yeo[1*] and Siti Aishah Binte Shukri[1]

1. *Dyslexia Association of Singapore*

Abstract

The ability to read numbers and to speak about them is one of the basic skills in mathematics, yet there is a dearth of research on the difficulties students experience when trying to express numbers in words, especially in relation to dyslexia. This study explores the types of errors students with dyslexia were making with expressing 5-digit numbers in words. This investigation is part of a larger research study to measure the performance of a group of Grade 4 students in Whole Number concepts after attending a 6-month long mathematics intervention programme at the Dyslexia Association of Singapore. These students have been identified to have dyslexia as well as mathematical difficulties such as having difficulties with remembering times tables, fluent and accurate calculation, and understanding word problems. Results from both qualitative and quantitative analyses showed that the participants' errors could be classified as: (1) spelling errors (e.g. spelling the number 40 as "fourty"); (2) punctuation errors (e.g. omitting a hyphen in "twenty-seven"or a comma after the word "thousands"); and (3) sentence structure errors (e.g. using the conjunction "and" too frequently when expressing 5-digit numbers in words). Although students did make fewer errors after the intervention, the types of errors made remained constant. This study concludes with possible causes for such errors and provides suggestions for professionals working with dyslexic students on mathematics about what they could do to better support their learners in this task.

Keywords: Writing numbers in words; number sense

* *Correspondence to:*
Rebecca Yeo, Lead Educational Therapist and Manager of DAS Maths Programme. Email: Rebecca@das.org.sg

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Vol 6, No. 2, July 2019

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Elizabeth Ow Yeong[1*]

1. *National Institute of Education, Nanyang Technological University, Singapore*

Abstract

This is an ethnographical qualitative inquiry into the quest to explore the factors (both personal and systemic) that have enabled educators (which hereby refer to both teachers and allied educators for learning behaviour support) to effectively work with students with special needs in the mainstream Primary and Secondary schools, and enabled these students to have a positive experience in schools.

By employing information gleaned from multiple audio-recorded and verbatim transcribed interviews from educators who had worked effectively with students with special needs from the four different school zones, and from 15 different schools (Primary and Secondary) with students from varying Socio-economic status (SES), the research explores the factors that have enabled the educators to be effective in their support, both on a personal and on a systemic level.

A framework is then proposed for educators to enable them to effectively work with students with special needs in the mainstream Primary and Secondary schools in Singapore.

Keywords: Enabling factors, special needs, mainstream

* *Correspondence to:*
Elizabeth Ow Yeong, National Institute of Education, Nanyang Technological University. Email: waimang.owyeong@nie.edu.sg

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

Robots and children learning differently: A Brief Review of Robot Applications For Young Children

Patricia Ng Mui Hoon[1*]

1. *Education Consultant, Early Childhood and Special Education*

Abstract

The purpose of this review is to explore robot use for its potential benefits in educating today's children who need to be learning differently from the generation before. As children are growing up in an increasingly tech-savvy world, this review would serve to raise the awareness of robot applications developed for young children. The studies and reports included in this review are a selection of robot applications used with children in the general population of early childhood (0 - 8) years. Based on collaborative efforts in function and design such as the use of puppetry, as well as curriculum design in areas such as behaviour modification, social or motor skills, numeracy, language and literacy through storytelling and/or games, the robot applications reviewed here have been found to present with great potential for a dynamic way to educate the young. Implications for use with children with special needs are discussed

Keywords: Robot applications, young children, learning differently, general population.

* *Correspondence to:*
Patricia M. H. NG, M Ed, Education consultant in early childhood, special education, teaching practicum supervision, pre-service and in-service courses. Email: patngmuihoon@gmail.com

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

Auditory, Visual and Cross-Modal Temporal Processing Skills among Chinese Children with Developmental Dyslexia

Li-Chih Wang[1*]

1. *Department of Special Education & Counselling, The Education University of Hong Kong*

Abstract

The present study examined whether temporal processing (TP) is associated with the reading of a non-alphabetic script, i.e., Chinese. A total of 126 primary-school-aged Chinese children from Taiwan (63 children with dyslexia) completed cross-modal, visual, and auditory temporal order judgment tasks and measures of Chinese reading and literacy-related skills. The results showed that typically developing children and children with dyslexia differed in all TP skills. Structural equation modeling indicated that cross-modal TP contributed independently to character recognition in the entire sample if the significant effects of phonological awareness, orthographic knowledge, and rapid automatized naming were considered. The multi-sample analysis showed that TP did not predict reading in the typical group after controlling for literacy-related skills, but visual and cross-modal TP skills independently contributed to reading in the dyslexic group in addition to literacy-related skills. Finally, the path analysis indicated that in the typical group, separate TP skills affected reading through literacy-related skills, but visual and cross-modal TP skills had direct effects on character reading in the dyslexic group. These findings suggest that TP is more important for reading in children with dyslexia than in typically developing children, and the roles of TP in dyslexia require further examination.

Keywords: temporal processing, cross-modal, dyslexia, Chinese

* *Correspondence to:*
Dr Li-Chih Wang, Assistant Professor Department of Special Education and Counselling, The Education University of Hong Kong.
Email: wanglca@eduhk.hk

Asia Pacific Journal of Developmental Differences
Vol 6, No. 2, July 2019

Saccadic Suppression in Dyslexics

Parameswari Shunmugam[1*], Vijayakumar V.[2] and Muthusamy K. A.[3]

1. *Port Dickson Polytechnic, Malaysia*
2. *University Cyberjaya, Malaysia*
3. *University of Malaya*

Abstract

EEG data was obtained from dyslexics and controls during a reading task. The data was then cleaned and analyzed using EEGLAB. An event-related spectral perturbation (ERSP) analysis of the two groups for every electrode was performed and the output displayed graphically. Visual inspection of the plots enabled us to compare visual signal suppression indicated in ERSP plots obtained from our EEG data. From these plots, we have found significant differences in saccadic suppression before, during, and after the onset of saccades between the dyslexics and controls.

Keywords: Reading, saccadic suppression, dyslexia

* *Correspondence to:*
Parameswari Shunmugam, Lecturer, Port Dickson Polytechnic. Malaysia. Email: paramesia@gmail.com

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Vol 6, No. 2, July 2019

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* *Correspondence to:*
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