

DAS HANDBOOK 2019

DYSLEXIA ASSOCIATION OF SINGAPORE

EDITOR: EMERITUS PROFESSOR ANGELA FAWCETT

MANAGING EDITOR: DEBORAH HEWES



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EDITORIAL NOTE

The views expressed in this book are those of the individual contributors, and do not necessarily represent the policy of the Dyslexia Association of Singapore (DAS). Whilst every effort has been made to ensure the accuracy of information given in this handbook, DAS cannot accept responsibility of the consequences of any errors or omissions in that information. In certain articles a gender pronoun, eg. his/her, this is used purely for the sake of convenience by the author.

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DYSLEXIA ASSOCIATION OF SINGAPORE

DAS HANDBOOK 2019

A collection of DAS programme evaluations and other information that support people with dyslexia and information for their families and the professionals who work with them to help them embrace dyslexia.



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INTRODUCTION



CEO's Message

Lee Siang
Chief Executive Officer
Dyslexia Association of Singapore

Having passed my 5th year as Chief Executive Officer of DAS in September 2019, I am most heartened by the publication of this 5th edition of the DAS Handbook. On top of ensuring that dyslexic children from lower income families are able to access much needed DAS programmes and services through the provision of bursaries, our emphasis over the past five years has been on the development of scope, expertise and reliability at DAS. The content of the DAS Handbook reflects this emphasis as it shares the educational developments in DAS curriculum, the expansion of the professional scope at DAS, the reliability that comes with programme evaluation which in turn reflects the increasing expertise of DAS. It is wonderful to read in this Handbook the many testimonials of parents and students who have benefitted from our programmes and services.

DAS staff have put in a most commendable effort to achieve historical enrolment highs in Term 4, 2019 of 3,157 students for the MOE aided DAS Main Literacy Programme (MLP) which is run by the English Language and Literacy Programmes Division (ELL) and 1,289 enrolments for regular Specialised Educational Services (SES) programmes. DAS International conducted a total of 2,144 hours of specialist tutoring in FY2018-2019 for local and international school students which is also a historical high. One of the main reasons for the high student numbers was good word of mouth from parents and teachers which is the main "source" of referral in our annual client survey.

"It is wonderful to read in this Handbook the many testimonials of parents and students who have benefitted from our programmes and services."

The good enrolment numbers was also the result of DAS staff making continuous improvements and additions to curriculum for different programmes and student age groups:

- We launched SpLD Assessment Services in late 2017 and DAS psychologists have continued to broaden their assessment range from just dyslexia to include associated SpLDs including ADHD, dyscalculia, dysgraphia, etc. In 2019, SpLD assessments beyond dyslexia amounted to 10% of all assessments. DAS psychologists also conducted assessments for international school students and post-secondary clients.
- ◆ In late 2018 and early 2019, ELL introduced the iReach programme which focuses on reading comprehension and writing thus preparing students for higher order tasks in schools and the blended iStudySMART programme which prepares older students for transition into postsecondary education. There have also been continued developments in the use of technology in our classrooms with M-Learning Week and Appy Hour.
- SES enhanced the Problem Sums for Upper Primary Maths curriculum, initiated a Science Programme for primary school students and conducted a 30 hour programme for seven students at Nanyang Polytechnic in late 2018.
- The Staff Professional Development team is preparing an e-learning revision platform currently titled "Project V" for DAS Educational Therapists. For the professional well-being of DAS staff, a ClamEd initiative has also been launched.
- For training open to the public, DAS Academy launched an expanded Specialist Diploma in SpLD which allows teachers to focus on specific areas during their training, for example in Literacy teaching, Preschool teaching, Chinese teaching, adult support, etc. DAS Academy also launched an enhanced Masters in SEN/ALN with more practical options.

The above expansion of scope and expertise allowed DAS to provide services beyond our 14 DAS centres. DAS taught in schools including PAP Community Foundation Preschool Centres, Assumption Pathways School, Northlight School and others. We conducted a literacy and numeracy programme for 5 residents of the Singapore Boys Home in Term 4, 2018 and Term 1, 2019.

DAS Academy responded to requests and conducted additional workshops in local and international schools and other organisations. For the first time, DAS International conducted two training courses in China in June and December 2019.

DAS will continue to build a pool of expertise in Dyslexia and Specific Learning Differences here in Singapore. I am delighted there are currently four DAS staff pursuing PhDs and 29 staff have completed Masters degrees in related fields. To facilitate the reliability of DAS programmes, programme evaluation and research has become part of the culture at DAS. Besides the DAS Handbook, the 11th and 12th issues of the DAS-published Asia Pacific Journal of Developmental Differences featuring research articles from DAS staff as well as researchers from Singapore and the region were published in January and July 2019 respectively. In June 2015, DAS organised the first UnITE SpLD Conference and a fifth instalment was organised from 26-28 June 2019 with speakers from DAS, Singapore as well as Australia, China, Hong Kong, Indonesia, India, Japan, Kenya, Malaysia, Italy, UK and US.

And there were many more developments...

The work and achievements of DAS over 28 years would not have been possible without our supporters, donors, volunteers, parents and of course the staff of DAS. DAS must thank the Ministry of Education (MOE) for their continuous support over the years and providing the MOE Grant for dyslexic students attending the MOE-aided DAS Main Literacy Programme (MLP) at our 14 DAS Learning Centres.

We were most heartened by the visit of Mr Wong Siew Hoong, MOE Director General of Education to the DAS Bedok Learning Centre on 6 May 2019 to observe classes in session. We are glad that Mr Wong was impressed with the curriculum and quality of teaching at DAS and look forward to his continued advice. We are also very grateful to Mrs Lucy Toh, Divisional Director, Special Educational Needs Division, Ministry of Education for attending the DAS Student Graduation and Achievement Awards Ceremony on 26 November 2019 as our Guest of Honour. Her presence was most encouraging and re-affirmed the Government's support for our students and their parents.

DAS strategy for the next five years remains unchanged and this is "To build a comprehensive and holistic range of programmes and services for our clients with Dyslexia and Specific Learning Differences". Major areas for development include the increasing use of technology in our classrooms, the continued development of talent-based programme such as an Artventures programme as well as piloting support for offenders in the Prison School.

This has been a wonderful team effort and I must once again acknowledge DAS colleagues for their immense effort and the Executive Committee for their support and guidance. Clearly the breadth and complexity of work at DAS has increased significantly. But DAS continues to be in pioneering country in almost everything we do and there is much more we can accomplish for the greater benefit of our clients with Dyslexia and associated Specific Learning Differences.

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LEE SIANG *CEO*—Dyslexia Association of Singapore

Siang joined DAS on 15 December 2001 and assumed the post of CEO on 1 September 2014. He also sits on the Board of DAS subsidiaries, DAS Academy and DAS International. Siang was on the Board of the US-based International Dyslexia Association and Chair of their Global Partners Committee from 2016 to 2018, he still remains a member of the Global Partners Committee representing Singapore. He has played a key role in the rapid growth of DAS into a thriving social enterprise with a multi-disciplinary professional workforce that provides a continuum of services. He emphasizes that DAS "must strive to fulfil our social mission by combining entrepreneurial and business skills with the philanthropic characteristics of non-profits".

Siang obtained his BA from the National University of Singapore via the sponsorship of the Singapore Armed Forces. He also has a Certificate in Dyslexia Studies, a PGC in Teaching and Learning in Higher Education and a PGC in Specific Learning Differences from London Metropolitan University, a PGDip in Financial Management from the Singapore Institute of Management and an MBA from the University of Western Australia. It is this unique balance of experiences and qualifications that have allowed Siang to oversee the diverse services and functions of the DAS family.

Siang contributes regularly to the DAS CEO BLOG. (https://www.das.org.sg/news-events/blogs/39-from-the-ceo-desk-ceo-thoughts.html)

Siang's current focus for DAS is Scope, Expertise and Reliability: The continued improvement of the scope and range of DAS programmes and services continued investment in the expertise of DAS staff and continued programme evaluation and research to add to the efficacy and reliability of DAS programmes and services

Additionally, DAS will strive to ensure that children with dyslexia from lower income families are able to access much needed DAS programmes through the provision of bursaries which are enabled by generous donations from sponsors and supporters of DAS.

Editor's Message

Emeritus Professor Angela Fawcett

Research Consultant Dyslexia Association of Singapore

It is a very great pleasure to share with you the fifth edition of our Dyslexia Association Handbooks, edited by myself with Managing editor, Deborah Hewes. Once again, this year I have been extremely impressed by the standards we achieve and maintain in providing support for children with difficulties, and the readiness of DAS to continually evaluate, upgrade and improve their provision. I would like to congratulate all those working with DAS on what they have managed to achieve and will continue to achieve over the coming years, going from success to success and expanding their provision as world leaders in the field of dyslexia.

In this DAS Handbook 2019, we adopt the successful format from previous years, with

the first sections on the DAS SpLD Assessment Services (SAS), a new initiative started in 2017, which is continuing to grow, and now includes a 3-year review which can be used to determine eligibility for concessions in school and national exams. The psychological services developed for DAS include dyslexia, dyscalculia, dysgraphia, attention deficit, autism, intellectual disability, giftedness, visual processing and school readiness. Growing numbers are now seeking diagnosis, and this year we have included a number of referrals for adults as well as post-secondary. This year staff focused their research on the enhanced comprehension curriculum, evaluating not only the usefulness of the approach, and noting the importance of executive function here, but also the attitudes of those therapists who delivered the new programme, identifying differences in relation to the number of years of experience in teaching.

"I have been extremely impressed by the standards we achieve and maintain in providing support for children with difficulties, and the readiness of DAS to continually evaluate, upgrade and improve their provision."

The next section is an in-depth report on the DAS Main Literacy Programme (MLP) funded by the Ministry of Education, highlighting the new programmes, iReach and iStudySmart, both introduced in 2019. This year MLP has introduced and evaluated the usefulness of annotation in comprehension, in relation to different achievement within the band levels. This study showed that Band A children made the most progress with this approach, and that Educational Therapists felt most competent in working with this group. Next year there are plans to introduce a parents' questionnaire on progress, and consider the impact on different levels within the bands, as well as address longer term gains. To enhance the quality assurance achievements, Educational Advisors have been appointed in each centre, to provide ongoing support in a range of areas. The iReach initiative was designed to provide deliberate vocabulary training across Primary and Secondary and increase confidence in the broadening school curriculum. iStudySmart, by contrast was designed for Secondary 4 and 5 students, to engage in a broad range of computerbased study skills, including an innovative Virtual Reality component. In my view, MLP is truly an example of a system that has developed and continues to evolve to fully understand the complex issues in SpLD for everyone involved. This year, Project V has been introduced to provide computer-based support for the Educational Therapists and they have benefitted from the introduction of CalmEd, using mindfulness-based techniques to focus on positive aspects of their teaching experience. The professional development of staff is highlighted in terms of internal and external training and opportunities for research and publication in Asia Pacific Journal of Developmental Differences (APJDD) and other international journals. A new system of classifying research has been introduced this year, and further collaborations with universities in the region undertaken. Finally, the Register of Educational Therapists -Asia (RETA) case study sessions for the year are highlighted, in my view a unique aspect of support provided by DAS, with exceptional potential for the most difficult cases.

Specialised Educational Services (SES) cover a broad range of topics associated with dyslexia, including Maths, Exam Skills, Preschool. Speech and Language and Drama, as well as specialised support for children with severe difficulties who need one to one support. This year Science Explorers and ArtVenture have been introduced, as well as Holiday Workshops in a range of topics. ArtVenture highlights the positive skills of DAS students, and included a number of public engagements, including workshops for parents. Art work completed by DAS students formed VIP gifts which were very well received. The next article in this section on Chinese presents details comparing progress with either 1 or 2 hours of intervention weekly, with significant results in most of the categories examined. This year a secondary school bridging programme has been introduced, as well as working with organisations in China. This year, the Maths programme has provided intervention for external students, adopting an APIE cycle to tailor support appropriately to

changing needs. In addition, the curriculum for Upper Primary problems has been enhanced. Moreover, a series of controlled studies have been undertaken, to evaluate the effectiveness of the programme, further establishing the effectiveness of this approach. The English Exam Skills Programme has changed its name this year to Prep 2 PSLE, developing a series of short programmes to address aspects of the examinations not previously available, as well as a pre-secondary bridging programme. The process of changing the curriculum was evaluated with external support, and the successfulness of the approach with struggling learners measured. The Pre-school programme has also increased the range of assessments, including standardised instruments, and has undertaken a controlled study which successfully separates out the effects of maturation from the impact of intervention. This is currently under review for publication in an international journal. This year the speech and drama programme has utilised a new test to evaluate socio-emotional development, which is thought to be impacted by experience in drama. They present glorious pictures from the Monkey King presented at UNITE SPLD 2018. The Speech and Language Programme outlines a study evaluating the progress of students on the CELF, in comparison with students currently on the waiting list for support. They highlight the demand from parents for a social skills training for children, which was conducted effectively. Finally, the new Science Explorers short term programme was evaluated and pre and post assessments showed that the programme was successful. It may be seen from these reports and the new developments ongoing, that DAS continues to grow and expand, with an everincreasing number of children benefitting from the support we are able to provide

This year we again present an analysis of the DAS International Services Programmes, that now tackles a wide variety of developmental differences, reaching 84 participants this year, and now available for all age ranges to university level. A major emphasis in the International session at the UNITE SPLD Conference had reports from China, India and Taiwan which has led to ongoing plans for future involvement and collaboration. Reports from teachers and parents indicate a high level of satisfaction with this approach. To complete this section, an article on DAS Academy is presented, the training arm of the DAS that is able to provide a range of courses that address the needs of our therapists and parents in terms of further training at all levels from certificates to Master's level.

As in last year's handbook, we present a section on embrace dyslexia, this year addressing the importance of early intervention for dyslexia, from students studying at Singapore Management University. Following interviews with DAS personnel, and a survey of parents and teachers, a range of approaches to maximise potential were suggested. Finally, in the international section, I present an update on my own theory of cerebellar deficit in dyslexia, which was recently supported by further evidence from neuroscience, in an article reprinted with permission from the British

Dyslexia Association's Contact publication, 2018

Together these Programmes and Academic initiatives provide a unique combination of theory and practice available to the region through DAS with their database of over 3000 children. It is interesting to note the further broadening of our approach to address even more of the wider implications of dyslexia, in terms of self-concepts and how these impact on performance.

I continue to be deeply impressed by the progress I have seen over this time period in terms of research output, innovation and development. As a Research Consultant to DAS, I have been able to work with more and more staff to help them with formal evaluation of their work. It has been reminiscent of working with PhD students in universities in the UK, helping them to develop a research ethos throughout their practice. This is an aspect of the work that I find particularly rewarding! We continue to work with local universities to obtain independent evaluations and this aspect is developing even further. We are now about to publish our 13th issue of the Asian Pacific Journal of Developmental Differences (APJDD), and our editorial management system is becoming stronger with every issue. We have now developed a fully functioning Scientific Review Board, a committee of researchers who ably assist with the peer review process.

I encourage you to check out the DAS website, where you can now access all the past issues of the APJDD as well as checking our editorial policies. This year we have focused again on UNITE SpLD, which continues to go from strength to strength as a major international conference. We continue to make substantial progress on the publishing front, we are currently awaiting news of a major article submitted to an international journal of early years education, and I am very proud of what we continue to achieve working together.



EMERITUS PROFESSOR ANGELA FAWCETT

Research Consultant Dyslexia Association of Singapore

Emeritus Professor Angela Fawcett is a leading international researcher into dyslexia and other developmental disabilities, encompassing a range of theoretical and applied contributions to this field. Angela is also an Honorary Professor at the University of Sheffield. Her approach is broad and interdisciplinary ranging from child and cognitive development to educational screening and intervention, as well as developmental cognitive neuroscience. She is the Vice President of the British Dyslexia Association and also the Former Chair and Director of the Centre for Child Research at the Swansea University, UK.

Angela has worked with the Dyslexia Association of Singapore for a number of years and is currently a Research Consultant to DAS. She is currently the Editor-in-Chief of the Asia Pacific Journal of Developmental Differences.



DAS SpLD ASSESSMENT



DAS SpLD ASSESSMENT SERVICES

SpLD Assessment Services (SAS) comprises of a team of Registered Psychologists and Specialist Psychologists who receive intensive training to ensure that they are well skilled to carry out psychoeducational assessments. SAS Psychologists see over 1200 referral cases each year and accumulate significant experience in conducting SpLD Assessments.

Once the child has been diagnosed to have dyslexia and/or other learning difficulties and is found suitable for DAS programmes, the psychologists would then determine the learner's profile. Each child has his/her own strengths and weaknesses which come together to make up their own unique learning profile. For the child who has been diagnosed with dyslexia and/or other learning difficulties and is found suitable for DAS programmes, the DAS Psychologists will differentiate his/her needs accordingly for placement in an appropriate class. This facilitates the DAS Educational Therapist in selecting suitable educational goals that address the child's needs more closely.

The progress of every student is monitored and reviewed by DAS Educational Therapists every six months. After three years, psychologists may conduct review assessments to determine the child's overall progress since his/her previous assessment. This assessment may also determine if the child is eligible for access arrangements for school and national examinations.

The DAS offers a range of psychological assessments that may help to address your concerns with regard to academic, attention and social skills. The difficulties that may be investigated include:

- Dyslexia
- ◆ Dyscalculia
- Dysgraphia*
- Autism Spectrum Disorder (ASD)
- Attention Deficit Hyperactivity Disorder (ADHD)
- Intellectual Disability (ID)
- ♦ Giftedness
- Visual Processing
- School Readiness

DAS Psychologists can provide psycho-educational assessments for students (Primary to Tertiary) as well as school-readiness assessments for pre-schoolers. Assessments and consultations are also available for adults with concerns.

^{*} requires Occupational Therapy assessment

DAS SpLD Assessment Services (SAS)

Geetha Shantha Ram¹ and Fong Pei Yi²

- 1. Director of SpLD Assessment Services, English Language and Literacy Division and Staff Professional Development and Head of Research
- 2. Manager & Educational Psychologist, SpLD Assessment Services Dyslexia Association of Singapore

INTRODUCTION TO SAS - WHERE YOU GO TO KNOW MORE

The SpLD Assessment Services (SAS) as a division was launched in October 2017. With this launch, admissions to the English Language and Literacy (ELL) and Specialised Educational Services (SES) programmes were merged to allow a single point of entry to all the programmes offered at DAS. Additionally, the assessment arms within the DAS were also merged and housed within SAS. The scope of SAS was also broadened to allow for the assessment of issues beyond dyslexia. The inception of SAS made it more convenient for all clients regardless of the nationality, school and need, to access services at DAS. This minimised the possible confusion and burdens our clients may have faced in determining which service(s) they can access.

2018 saw the SAS psychologists evaluating a greater variety of referral concerns. With that came a need for training to further enhance the psychologists' knowledge and skills in the assessments of difficulties such as attention deficit hyperactivity disorder and autism spectrum disorder. In their continued efforts to raise awareness about SpLDs and the available assessment services, the SAS team has also been involved in various talks with different organisations over the course of 2018. Furthermore, research on the enhanced reading comprehension curriculum of the MLP was concluded.

"The scope of SAS services were also broadened to allow for the assessment of issues beyond dyslexia. The inception of SAS made it more convenient for all clients regardless of the nationality, school and need, to access services at DAS"

2. REFERRALS AND ASSESSMENTS – IN NUMBERS AND MORE

In 2018, SAS recorded an increase in demand for DAS services compared to the previous year. 1731 referrals were received and processed by the department, which represented an increase of approximately 8.9% from 2017. Many of these referrals were for the purpose of seeking psychological assessments; SAS psychologists conducted a total of 1146 assessments over the year. Most of the remaining referrals were channelled directly into the DAS Main Literacy Programme (MLP) as those children had already been diagnosed with dyslexia by psychologists from the Ministry of Education or other service providers.

While a vast majority of these assessments continued to be conducted with the intention of querying for dyslexia, the year 2018 featured greater diversity in the types of assessments done as well. This was the result of SAS' expansion of services in October 2017 to include assessments for other conditions as well as age groups. Including the last quarter of 2017, SAS psychologists had conducted 21 assessments for attention deficit hyperactivity disorder, 10 for dyscalculia, and 3 for dysgraphia by the end of 2018. They had also seen 16 individuals of varied ages beyond secondary education.

As part of DAS ongoing mission to offer affordable services to children from families with financial constraints, bursaries continued to be granted to subsidize the assessment costs. By the end of 2018, 318 children, or about 27.8% of the children assessed, benefited from these bursaries.

3. RESEARCH

The Reading Comprehension Curriculum Evaluation Project concluded in 2018 with dissertations completed by Pei Yi and Minqi in fulfilment of their Master degrees at the National Institute of Education - Nanyang Technological University.

Findings from the research students are summarised as follows:

[a] Evaluation of the Enhanced Reading Comprehension Curriculum and Factors Predicting Reading Comprehension

This study examined reading comprehension in the context of dyslexia with two objectives. The first was to monitor the reading comprehension performance of primary school students with dyslexia who received literacy intervention at DAS before and after implementation of an enhanced reading comprehension curriculum. Students' (n = 42) reading comprehension scores were taken at three time-points (Time 1: baseline, Time 2: pre-enhanced curriculum and Time 3: post-enhanced

curriculum) over the course of two years. Significant improvements in reading comprehension were found for students with weaker verbal ability, but only for the period before enhancements to the curriculum were implemented.

While this finding suggests limited impact of the enhanced curriculum, definitive conclusions cannot be made at this point due to limitations of the study design. This pattern of results may suggest that a longer period of time may be necessary with advanced curriculum concepts. Additionally, weaker readers may need to follow the standard curriculum with a cut-off for skills required for implementation of the enhanced curriculum. Regardless, the findings provide an indication of how aspects of the intervention provided can contribute to improvements in reading comprehension (i.e. a greater language focus can be beneficial for students with weaker verbal ability).

The second objective was to explore the ability of five cognitive factors, namely verbal ability, non-verbal ability, phonological awareness, working memory and rapid naming ability, to predict concurrent (n = 31) and future reading comprehension performance at the end of one (n = 48) and two years (n = 44). Only verbal ability significantly predicted reading comprehension over time, suggesting its significance in the development of reading comprehension performance in students with dyslexia. It was further noted that these cognitive factors, including verbal ability and phonological awareness, did not fully explain the variance in reading comprehension skills in students. Hence, there may be more to reading comprehension than listening comprehension and phonological decoding skills, as the Simple View of Reading suggests. Additionally, recent interest in executive function suggests that aspects such as attention may be important here.

[b] Educational Therapists' Perceptions after Training for an Enhanced Reading Comprehension Curriculum

This study investigated the changes in perceptions and teaching behaviour in relation to teaching experience for Educational Therapists at the DAS following training for the Enhanced Reading Comprehension Curriculum. Forty-seven Educational Therapists were surveyed and changes in their perceptions and teaching behaviours post-training were analysed using mixed between-within ANOVAs. Findings showed that length of teaching experience affected the changes in perception and teaching behaviour in Educational Therapists following training. Less experienced Educational Therapists taught more of the skills they were trained on but the most experienced Educational Therapists did not. The training workshop also did not increase the perceived importance of skills covered during training for the most experienced group of Educational Therapists although it did for the less experienced Educational Therapists. In comparison, Educational Therapists of all

levels of teaching experience found greater ease in teaching the reading comprehension skills covered during training. With these findings in mind, curriculum teams and trainers may need to consider the teaching experience of educators as well as feedback from educators when implementing in-service training for curriculum changes.

4. CONTINUAL PROFESSIONAL DEVELOPMENT OF DAS PSYCHOLOGISTS

As part of DAS' commitment in providing high quality services to its service users, DAS psychologists continually receive training to update their knowledge of specific learning differences and enhance their assessment skills. Some of the external courses and workshops attended by DAS psychologists included ADI-R and ADOS-2 workshops by Dr Dr. Jennifer Endre Olson, "Counselling Skills and Practice" at the Social Service Institute as well as a "Cognitive Behavioural Therapy for Autism Spectrum Disorder (ASD) Adolescents" by clinical psychologist Dr Goh Tze Jui from the Institute of Mental Health.

Additionally, DAS psychologists organise a range of activities, on a weekly basis, which include learning journeys, case discussions, topical or journal presentations, test kit trainings and supervision/training by external experts on specific areas. In FY18/19, DAS psychologists went on 2 learning journeys to Metta School and APSN Katong School and held 6 case discussions to discuss profiles and insights gained from complex cases that involved the assessment of dyscalculia, attention deficit hyperactivity disorder (ADHD) and intellectual disability, as well as language/sensory/ behavioural issues that are comorbid with dyslexia.

DAS psychologists also learned how to use and/or discussed the interpretive use of the following tests:

- Wechsler Preschool and Primary Scale of Intelligence Fifth Edition
- ♦ Wechsler Adult Scale of Intelligence Third Edition
- ♦ Test of Variables of Attention Eighth Edition
- ♦ Keymath Third Edition
- Vineland Third Edition

Finally, to increase the support for the expansion of the SpLD Assessment Service, three external consultants, namely Ms Poon Siew Win (from Mind Matters), Ms Valerie Ho (from Insight Psychological Services) and Dr Liza Thia (from Liza Thia Psychological Consultancy), were invited to conduct training, supervision and consultations on either ADHD or ASD cases with senior DAS psychologists.

5. ENGAGEMENT AND AWARENESS

DAS psychologists conducted several talks and workshops to various audiences in 2018 as part of our efforts to bring awareness about dyslexia and DAS services to the public. Talks conducted by DAS psychologists include sharing about dyslexia with doctors at the Singapore National Eye Centre as well as to members of the public during the World Dyslexia Awareness Week. A career talk was also conducted for students from the Management Development Institute of Singapore (MDIS) School of Psychology where DAS psychologists raised awareness about dyslexia and shared about their experiences in conducting assessments for children.

Workshops were also run by DAS psychologists on how to read psychological reports as part of the training for new DAS Educational Therapists. At the DAS Academy, DAS psychologists also conducted certificate courses on Educational Psychology for parents and educators.



DAS SPLD ASSESSMENT SERVICES

www.das.org.sg/services/assessments.html *Scan me to find out more!*

ABOUT THE AUTHORS



GEETHA SHANTHA RAM

Director of SpLD Assessment Services, English Language and Literacy Division, & Staff Professional Development and Head of Research

Geetha Shantha Ram joined DAS on 16 August 2004 and assumed the post of Director of the English Language and Literacy (ELL) Division on 1 December 2014, which includes the Main Literacy Programme (MLP) and has led curriculum enhancements for the DAS through the Essential Literacy Approach and the current integrated MLP curriculum.

Besides ELL, Geetha oversees the SpLD Assessment Service and Staff Professional Development division, where she led the development of professional pathways and quality assurance of all educational efforts. She also heads the DAS Research Committee and is an advisor in the Register of Educational therapists (Asia) (RETA). Formerly, the Assistant Director of the DAS Academy, Geetha trained Allied educators, parents and other professionals and continues to present at conferences, most recently at the 2019 Dyslexia Speld Foundation Conference in Perth.

Geetha has a Masters in English (NUS) and a Post Graduate Certificate in Learning and Teaching in Higher Education (Distinction) (LMU) and is currently pursuing her doctorate in the area of twice-exceptionality. With over 14 years of experience supporting children and adults in the area of dyslexia, Geetha aims to provide a quality service to dyslexics that searches for and realises their true potential and provides them with a view to appreciate their own unique abilities.



FONG PEI YIManager & Educational Psychologist
SpLD Assessment Services

Pei Yi started out at the DAS as a Specialist Psychologist in 2012. Since then, she has completed the Master of Arts in Applied Psychology programme at the NIE and is a Registered Psychologist with the Singapore Psychological Society. Pei Yi is currently the Manager of the SpLD Assessment Services at the DAS, a team that provides a one-stop psycho-educational assessment service and facilitates the placement of students in learning programmes at the DAS. She also conducts psycho-educational assessments for individuals who experience difficulties with learning.



DAS ENGLISH LANGUAGE & LITERACY DIVISION





DAS English Language and Literacy Division

"To map the way for young dyslexics to live a life of beauty and promise through a comprehensive, high quality service provided by inspired professionals"

The English Language Literacy & Language division provides intensive intervention in English Literacy including the comprehensive Main Literacy Programme and educational technology-infused lessons to best engage our learners.

English Language and Literacy Division Programme Evaluation

Geetha Shantha Ram¹, Sujatha Nair², Serena Tan Abdullah³, Soofrina Mubarak⁴

- Director of SpLD Assessment Services, English Language and Literacy Division and Staff Professional Development and Head of Research
- 2. Assistant Director, Quality Assurance, English Language and Literacy Division
- 3. Assistant Director, Curriculum Development & Implementation, English Language and Literacy Division
- 4. EdTech Coordinator and Senior Educational Therapist

 Dyslexia Association of Singapore

ENGLISH LANGUAGE AND LITERACY (ELL) DIVISION

The English Language and Literacy (ELL) Division is focused on helping learners with dyslexia overcome their challenges with English while enabling them through their individual strengths.

ELL, therefore, develops English language and literacy programmes and resources, enhance current intervention to ensure that it remains beneficial for learners with Dyslexia, prepares teachers and guides the implementation of appropriate intervention and evaluates the effectiveness of the programmes under the division.

Currently, there are 3 programmes offered under ELL:

- The Main Literacy Programme (MLP)
- 2. iReaCH (launched in March 2019)
- 3. iStudySmart (launched in July 2019)

DAS Main Literacy Programme (MLP)

"To map the way for young dyslexics to live a life of beauty and promise through a comprehensive, high quality service provided by inspired professionals"

Curriculum Framework - MLP provides a comprehensive and quality curriculum that supports dyslexic students facing literacy challenges in a positive learning environment, engages parents and other stakeholders to ensure the success of our students.

MLP Learning Components

- Language and Vocabulary
- Phonemic Awareness
- Phonics
- Morphology
- Reading Fluency
- Listening/Reading Comprehension
- ♦ Writing

MLP Learning Principles

- To promote and facilitate reading and spelling development
- To equip students with the essential comprehension skills needed to draw inferences
- ◆ To accentuate the importance of reading fluency through the deliberate planning of reading tasks that takes into account students' reading fluency and accuracy
- ♦ To emphasize vocabulary development of sight and high frequency word through instructions leveraging on Edu-Technology
- ♦ To develop diverse and localised manuals, materials and resources to cater to the learning needs of students

MLP Teaching Resources

- ◆ Language and Vocabulary pack
- Phonemic Awareness and Phonics pack
- ♦ Morphology pack
- Grammar for Writing pack
- Advanced Writing pack
- ♦ Listening/Reading Comprehension pack

1. INTRODUCTION TO THE MAIN LITERACY PROGRAMME (MLP)

[a] Background of Programme

The Dyslexia Association of Singapore's (DAS) mission is to help families and individuals impacted by dyslexia to achieve. The DAS has adopted the Professional Practice Guidelines (PPG) definition of dyslexia which recognises it to be a specific learning difficulty of language learning and cognition that primarily affects accurate and fluent word reading and spelling skills with associated difficulties in phonological awareness, verbal memory and processing speed (Ministry of Education, 2011). By default, the Main Literacy Programme (MLP) students require a diagnosis of dyslexia by a registered psychologist to receive help at the DAS.

MLP offers intervention, taught in accordance to Orton-Gillingham (OG) principles, which is language-based, cognitive, structured, sequential and cumulative, multisensory, diagnostic and prescriptive and emotionally sound. It aims to equip students with the necessary skills and strategies delivered explicitly to help them cope with their literacy challenges in the areas of reading, spelling, reading fluency, listening/reading comprehension and writing.

For more information about the OG approach, do visit this YouTube video: https://www.youtube.com/watch?v=ZDLxcUNpCzQ

MLP focuses on these elements:

- the recommended areas of instruction for learners with dyslexia (National Reading Panel, 2000; Rose, 2009)
- individualised group lessons taught in accordance to the OG principles (Ritchey & Goeke, 2006; Rose & Zirkel, 2007) and modified in view of institutional and funding limitations
- a suggested framework of information bearing in mind cultural sensitivities and emphasising conceptual teaching of language components as "[k]nowledge organisation is one element that has been used to differentiate novices from experts" (Ridgeway & Dunston, 2000)

[b] Our Vision

Acquisition of literacy skills is more than managing school, it's to manage and live life with possibilities. MLP not only looks to provide students with literacy skills but as an important by-product of its intervention, MLP looks to instil them with the belief that they indeed can and deserve a future that is as beautiful as a child's dream, one that is full of promise – a potential that is not limited by their dyslexia but

instead enhanced by it, once they've been given the tools to overcome their challenges and by identifying and nurturing their talents.

Given the responsibility of enabling our learners to achieve and recognising what is at stake, MLP has set itself very high goals and continuously looks towards enhancing its service, both in coverage of knowledge and skills as well as in quality. Not to be forgotten, the dedicated team of MLP educational therapists are reminded of the value of their roles in the lives of these children and through their commitment to the cause, help our learners form these dreams and make them a reality.

Hence, MLP's vision remains consistently clear:

To map the way for young dyslexics to live a life of beauty and promise through a comprehensive high quality service, provided by inspired professionals.

Programme Description

MLP comprises three main functions: Admissions, Curriculum Development and Enhancement and Quality Assurance.

The main roles of the various departments are summarised below:

- Admissions A team of psychologists from the SpLD Assessment Services (SAS) Division participates in screening of learners to enable identification of at-risk students. Upon receipt of applications from parents, schools and other professionals supporting learners, specialist and educational psychologists conduct assessments to formally diagnose the needs of learners, and subsequently, make placement referrals for intervention. A team of administrative staff support the referral process as well as bursary needs of students who may require financial assistance.
- Curriculum Development and Enhancement A team of experienced senior and lead educational therapists regularly evaluate the current curriculum and its relevance based on profiles of students and recommended intervention by the Admissions team. Further development, implementation and enhancement of the curriculum are based on these evaluations and proposals for additional programmes within the curriculum are also considered so that all students equally benefit from MLP.

Educational Advisory – A team of educational advisors conducts a needs analysis so that they can assist with the development and support of educators through broad-based support as well as intensive remediation guidance. The evaluation of educator performance and the formulation of further training to develop them further ensures that educators can effectively translate the curriculum to meet the needs of their learners. Additionally, through progress monitoring of students and their graduation, this department keeps its view on the quality of the programme through the learners

[c] Banding - to meet the needs of the learners

In 2013, MLP introduced banding as a way to ensure that:

- Student's learning needs are matched with the level of teaching within the MLP curriculum
- Educational targets are set at the start of the intervention and adjusted as the student progresses through the MLP curriculum.
- Teaching is more responsive to the student's changing literacy profile so that measures can be put in place to address any lack of response to intervention.
- Programme evaluation can occur and quality assurance standards can be met
- Student's graduation from MLP is based on his / her progress from his / her initial banding

In grouping existing students, psychologists utilised available information from the students' psychological reports to position them as best benefiting from either the Band A, B or C curriculum - in other words, what are the more urgent requirements in the provision of intervention for that child. Within each band, there are three levels of literacy learning, making it nine levels in total. Each year, MLP monitors and seeks to understand the needs of students who are referred to its programme, knowing that each dyslexic student is different at different stages in their educational journey and some may require more intensive forms of support (e.g. speech and language therapy) or a different emphasis of teaching (e.g., more language based work versus more literacy based work).

For instance, Band A covers emergent literacy skills and students who are assigned to be in this band typically have language or cognitive weaknesses that co-occur with their dyslexia. They often show emergent literacy skills, such as having some awareness of the alphabet, how letters are formed, how text goes across the page from left to right and being able to read and spell some basic words. These students

need support in boosting their listening and speaking skills while improving their literacy foundations. They may also need a slower pace of learning, with more opportunities for repetition.

Band B, on the other hand, covers functional literacy skills and students who are placed in this band would likely have fairly developed language skills but significant basic literacy difficulties. They may have some reading and spelling skills of familiar words but struggle with understanding and applying letter-sound correspondence rules in reading and spelling new words. They also have reading fluency, reading comprehension and paragraph writing difficulties.

Band C covers functional to advanced literacy skills and students who are placed in this band would likely have fairly developed language skills and some functional literacy skills but continue to struggle with reading fluency, reading comprehension and composition writing.

2. MLP IN NUMBERS

2018 (Jan - Dec)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2802	2842	2866	2909	2892	2933	3039	3033	3082	3108	2811	2776

3. RESEARCH CONDUCTED

[a] Main Literacy Programme (MLP) Enhanced Reading Comprehension Curriculum

The changing needs, profiles and demands of the students on the Main Literacy Programme (MLP) as well as the need to keep abreast with the mainstream curriculum were instrumental in the efforts to enhance the reading comprehension curriculum. The enhanced curriculum includes not only the skills and concepts essential in supporting students with varying profiles and age groups (primary and secondary), it also includes techniques and methods to teach reading comprehension in a structured and explicit way that benefits students with dyslexia.

Reading comprehension is defined as the "process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (Snow, 2002). Apart from experiencing difficulty in reading, spelling and writing, learners with dyslexia also struggle significantly with comprehending texts that involve higher-order thinking processes which are critical to helping them make meaningful connections. Thus, a systematic and structured teaching approach through the employment of annotation was put in place to teach reading comprehension to students, to ensure that they are well guided and supported to cope with the exacting demands of reading comprehension.

[b] Reading Comprehension and Annotation

Research findings have supported the importance of careful modelling, scaffolding and active text-annotation to improve comprehension (Fowler & Barker, 1974). This is especially so for students with learning differences to better encourage active participation as well as promote greater maintenance and transference of skills and strategies. Annotation, a writing-to-learn strategy for use while reading or rereading, is highly encouraged to help readers develop a greater and deeper engagement with the text and in turn, promote active reading. Explicit and direct instruction ensures structure, clarity, careful task sequencing and guidance- all of these are essential in supporting students with dyslexia.

Most proficient readers are able to make use of their intuitive knowledge to help them make sense of the text they read and thus, are able to understand and interpret the writer's intent and his approach to conveying his thoughts and ideas effectively. However, less proficient readers may not possess this intuitive knowledge and therefore, need to be trained with a more concrete and explicit technique of interpreting texts such as annotation to help them understand the contents of the text. Annotating a text helps readers pay attention to both grammatical features and vocabulary that are crucial in helping them connect related ideas and interpret more accurately what they are reading.

While most students do recognise the importance of annotation, unfortunately, most of them do not follow through because they may not know how to go about annotating the text in a manner that helps them understand more easily what they are reading. Therefore, when teaching reading comprehension to students on MLP, cohesive devices and vocabulary are two main areas of emphasis that teachers will highlight as they guide and scaffold the lessons to help them to interpret texts meaningfully.

[c] Main Literacy Programme (MLP) 's Progress Monitoring

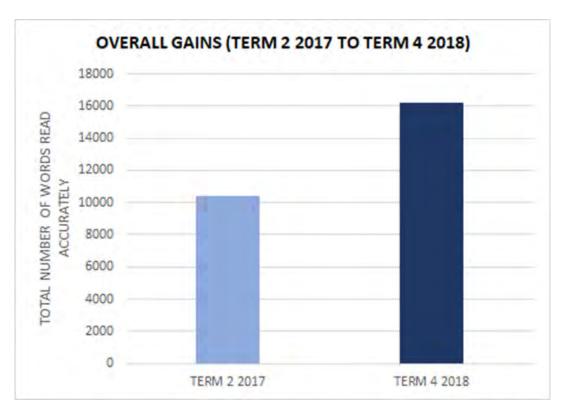
Following admission, students' cognitive and literacy profiles are further analysed to assign a band (Ram et.al., 2015) for their educational placement within the programme enabling MLP to offer individualised lessons taught in accordance to the Orton-Gillingham Principles (Ritchey & Goeke, 2006; Rose & Zirkel, 2007). Each band has three levels of literacy learning, making it a total of nine levels across bands "A" to "C". There are four core skills that are covered in cumulation - from emergent to functional to advanced literacy skills - across these bands; they are phonics/morphology, language & vocabulary, reading comprehension and writing. Students' progress across these skills is then monitored using digitised Curriculum Based Assessments (CBAs).

The rate of progression across the four skills is not expected to be uniform - owing to varying student profiles and ensuing curriculum. In a previously conducted study (Nair, Ram & Kurusamy, 2018) it was observed that the Band A students generally made the most significant progress in reading. The current study aims to check if the reading gains made by Band A students still holds true and to further analyse the profile of the learners making the reading gains.

In 2018, we did a study to evaluate the Reading Gains made by our learners. We selected students who joined us in Term 1, 2017. We had to have a cut-off for selection because we wanted to avoid practice effect whereby familiarity with the tests can increase the overall score. We then measured the total number of words read in Term 2, 2017 by the cohort of students against the total number of words read in Term 4, 2018 by the same cohort, i.e. we measured the reading progress made by these students over a period of 2 years (4 rounds of CBAs). Students were tested using Curriculum Based Assessments and they were tested on single word reading accuracy.

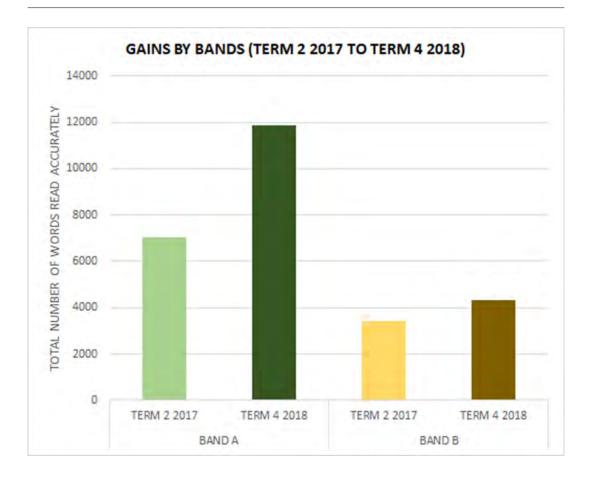
The following statements elaborate on the overall reading gains over 3 semesters:

- The students' word reading accuracy scores from the first round of CBAs conducted in Term 2 2017 were measured against the final round in the year long period of study conducted in Term 4 2018 in order to check if the gains made remained consistent over an extended period of time
- The reading gains made post 3 semesters of intervention were significant



Reading Gains Made by Band over Period of Study

- ♦ There was a 55.44% increase in the overall reading scores which translates to an approximate 3.08% increase per month of intervention
- Students were split into two groups Band A and Band B based on their entry banding
- The aggregate reading gains made by students in each band category from the first round of CBAs - conducted in Term 2 2017 - were measured against the final round in the year long period of study - conducted in Term 4 2018 - in order to confirm for the learner profile that made the most gains
- ♦ Band A students showed a 69.13% increase in their aggregate reading gains while Band B students showed only 27.16% increase
- In the 3 semesters of intervention, gains made by Band A students were the most significant



This result is in-line with a 2017 internal study.

In 2017, a study was conducted on Teacher Perception and Student Progress. The results from the study revealed the following:

- Band A students made better progress in both Word Reading and Word spelling than Band B students
- EdTs are more confident in supporting the lower functioning students than the higher functioning ones
- ♦ EdTs believe that Band A would make the most progress amongst the 3 bands.

The result from this 2018 study revealed the following:

- Increased reading progress among Band A learners suggests that explicit, foundational phonics instruction for lower ability levels result in more evident progress in reading.
- Band B encompasses more complex phonics concepts, hence perhaps reading tasks take longer to learn as they are more challenging to attain.
- Teacher perceptions on lower banded students' needs could continue to be an influence in the adequacy of support given to higher banded students (Nair, Ram & Kurusamy, 2018)

The above revelation from the two research warrants further investigation and also to identify if there are training gaps and support for EdTs to support students in the other bands.

Other potential areas of investigations that we are considering are:

- Within Band A itself there are further 3 sub-divisions Band A1, Band A2 and Band A3. To find out which of these bands made the most significant progress.
- To form a new sample and conduct a second round of data collection and analysis, with the following in mind:
 - Sort students into groups based on school levels, uniform learner profiles and take note of diagnosed co-occurring issues
 - Parent questionnaire on additional support provided
- To measure reading and include spelling gains over a longer period of intervention and tracking of long-term progress
- Evaluation of impact made in other cumulative skills (eg. writing)
- Evaluation of impact made in all the band relevant skills under each band category

4. ENSURING THE QUALITY OF THE PROGRAMME

[a] Annual Quality Assurance audits

DAS Quality Assurance audit is an annual process that all Educational Therapists teaching under the Main Literacy Programme have to undergo. The Quality Assurance audits are conducted by the Educational Advisors.

For FY2018-2019, 2 types of Quality Assurance Audits took place:

- (1) Lesson Delivery Audit
 - Lesson Delivery audits have been in place since 2014. From 2017 a newly revamped audit form has been used to assess the quality of teaching.
 - This new form includes scoring according to the different bandings as the components taught differ across the bands, i.e. band appropriate marking was adopted.

(2) Documentation Audit

- Documentation audit trial documentation audits were conducted in 2015 - 2016. After conducting these audits, the audit results were reviewed and the forms used for the audit were critically analysed and a new form was created.
 - One important change made to the form was the grading of quality lesson plans, the grading was aligned with the KPI grading outlined by HR.

It is a requirement that all EdTs teaching under the Main Literacy Programme (MLP) must be audited once for each financial year. They must receive at least a "Met Requirements" score for that financial year.

In situations, where the Educational Therapists do not meet with the requirements, they will be provided with individual support and training to help them. A follow-up audit will be carried out after the refresher training/support or after 1 term. If the EdT fails to meet the necessary criteria again during the repeat lesson observation or documentation audit despite the training/support given, he or she would be deemed to have failed to meet the Key Performance Indicator set for them for that Financial year.

[b] Broad base support

An Educational Advisor is stationed at every Learning Centre to provide support to all Educational Therapists. They are readily available to provide support and advice to all who need it.

For novice Educational Therapists, the support provided will be in the foundational area of developing their teaching skills. For mid-level and experienced Educational Therapists, the Educational Advisor is readily available to provide advice in the areas of professionalism, research project and etc.

Ever so often, Educational Therapists might need an extra pair of eyes to observe and provide feedback to them on their teaching and help them deliver a more effective lesson. In such cases, they can request for observation by an Educational Advisor. At any point, if the Educational Therapists feel they would like to have feedback or support in any area of their job, they can approach the Educational Advisors.

The Educational Advisors have provided support to Educational Therapists in the following areas:

- Lesson planning
- ♦ Lesson Delivery
- Behavioural management
- In-class observations of teaching
- ♦ Co-teaching
- Individual time-table planning and scheduling
- Differentiating lessons to help support their students
- How to meet with the Key Performance Indicators that have been set for them
- Handling students with social and emotional issues
- ♦ Conducting Parent-Teacher meetings
- Report writing
- Parent engagement and communication
- ♦ Student engagement
- Progress monitoring of students
- Centre sharing

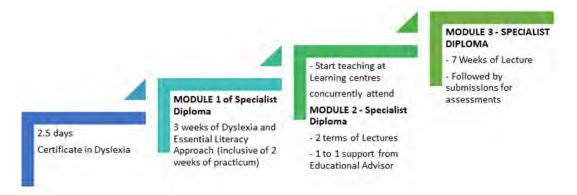
5. TEACHER TRAINING

For 2018 - we recruited 2 batches of Educational Therapists. One batch in February 2018 and another in June 2018. The recruitment breakdown is as follows:

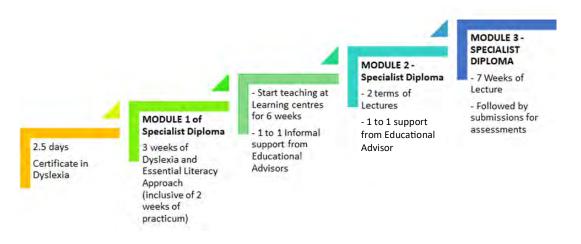
- ♦ February 2018 4 full-time Educational Therapists
- ♦ June 2018 4 full time Educational Therapists

Owing to the different recruitment timelines, the 2 batches of Educational Therapists have a slightly varied training timeline.

For the February 2018 batch the training is as follows:



For the June 2018 batch the training is as follows:



The subtle difference in training mode is that Educational Therapists in the June batch will start teaching first and then attend Module 2 of their Specialist Diploma in the following term. However, during the term whereby they do not have lectures - they will still be receiving informal support from Educational Advisors.

6. NEW INITIATIVES TAKEN FOR 2018

The DAS has supported more than 11000 students since 1993 and we've consistently received requests, especially in recent years, for more support in the following areas:

- a targeted Reading Comprehension and Writing programme to better support the students to cope with the increasing demands in the school curricula
- ♦ A Study Skills programme to equip students with the necessary tools and strategies as they prepare to transition into tertiary level education.

Therefore, besides the Main Literacy Programme (MLP), the DAS English Language and Literacy (ELL) Division has recently launched two new programmes, iReaCH and iStudySmart to cater to the learning needs of our students today.

[a] iReaCH

The primary aim of iReaCH is to support students in Reading Comprehension and Writing and enable them to manage higher order tasks expected of them in school through the deliberate use of vocabulary instruction and educational technology. The teaching principles emphasised in the development and the delivery of iReaCH adhere closely to the Orton-Gillingham (OG) principles to enable students with dyslexia learn efficiently and effectively.

iReaCH is developed not only to provide upper primary and secondary school students the skills and content knowledge to improve their reading comprehension and writing skills, it also aims to increase their confidence and preparedness to cope with the curriculum demands in school.

Aligned with the mainstream curriculum, the employment of vocabulary instruction coupled with the appropriate use of educational technology encourage learners to become confident and inquisitive knowledge seekers.





FOR MORE INFORMATION ON iStudySmart™

CALL 6444 5700

(Mon to Fri: 9.00gm to 5.30pm)

[b] iStudySmart™

In our constant efforts to develop and enhance programmes that cater not only to the students' learning needs but also to keep up with changing times and demands in the education landscape, iStudySmart, a blended learning programme, is developed for secondary 4/5 students with dyslexia embarking on their post secondary education as well as tertiary students with dyslexia already in institutes of higher learning. Lessons are delivered through blended learning where it combines both face-to-face consultations to provide personalised feedback and e-learning where the content is easily accessible online for the students to learn and progress at their own pace.

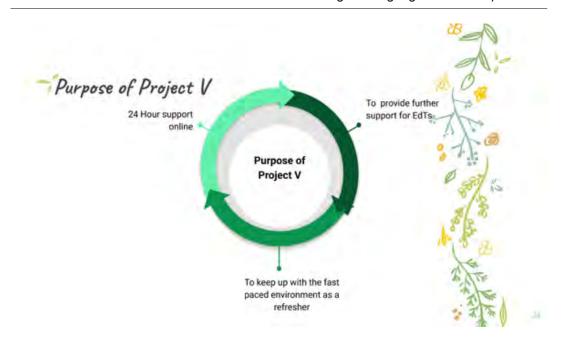
The employment of effective study skills techniques is essential especially for students with learning differences to enable them to overcome challenges in the academic environment. Hence, the iStudySmart programme aims to empower students in the areas of time management and prioritisation, planning and organisation, tertiary writing and presentation skills.

Further, in order to make learning more immersive and experiential for the students, Virtual Reality (VR) has been incorporated into the presentation module where students will have an opportunity to use the Virtual Reality (VR) headset to practise their speech, in preparation for their live presentation.

iStudySmart was trialled in Term 4, 2018 over a period of 10 weeks. It culminated in a live presentation put up by the students. The event, graced and supported by families, caregivers and educational therapists, was an astounding success where a range of relevant and thought-provoking topics were presented that day. Some of the topics include:

- ♦ 'Sleep Deprivation and its impacts on one's health and well-being'
- ♦ 'The Importance of Adopting and Maintaining a Healthy Lifestyle'

Preparing our students for the future is an important role of education and therefore, through iStudySmart, it is with hope that our students will be able to stand in good stead and better prepare themselves as they make the transition into IHLs and beyond. Hence, the iStudySmart soft launch- an expanded content will be rolled out in 2019 over two terms, Term 3 & 4 to support more students in becoming independent and successful individuals.



[c] Project V

A new initiative has been undertaken by the Educational Advisors (EA) in 2018. The EAs provide many platforms of support for lesson delivery, documentation, behaviour management, parent communication and etc. to all Educational Therapists.

However, we realised that the support given may be considered "one dimensional". It is a face to face support and at scheduled timings. We needed to give them a more holistic and flexible support, at times which are convenient. A platform whereby Educational Therapists are able to turn to if they feel that they need to improve their competency, a platform for them to seek clarity at their own time and pace. Hence, Project V was born.

It is an e-learning platform for Educational Therapists slated to be launched in 2019. Some of the modules that are in the pipeline are:

- Review card drill to dictation
- Reading Comprehension Personification, Metaphors and Irony
- Parent communication

[d] CalmEd

Another initiative that will be launched for all Educational Therapists is CalmEd. It is an interdisciplinary well-being initiative for Educational Therapists by Educational Therapists at the DAS. It aims to empower Educators through integrating mindfulness techniques in their craft, creating fulfilling experiences.

With all the stresses that our Educational Therapists go through each day we hope that through this initiative the Educational Therapists can create a state of calm awareness of the present moment- to help them cope and improve emotional control, cognitive function and physical well-being.

Brain-imaging studies have shown that long-term mindfulness training can help thicken the cortical regions related to attention and sensory processing, and may offset thinning of those areas that typically comes with aging and stress. 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).

CalmEd kicked off its pilot project with Educational Advisors to investigate how else mindfulness-based approaches can bolster the well-being of our educators. Currently all Educational Advisors are undergoing weekly training to incorporate mindfulness into their routine. These mindfulness tips will soon be shared with all Educational Therapists.

From February 2019 onwards, weekly mindfulness reminders have been sent out to everyone at DAS, encouraging deliberate mindfulness practices - the aim is for everyone to start focussing on the positives and not to dwell in the negative aspects in life.

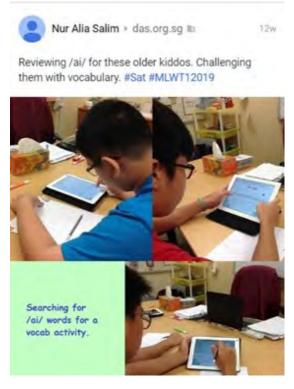
"With all the stresses that our Educational Therapists go through each day we hope that through this initiative the Educational Therapists can create a state of calm awareness of the present moment- to help them cope and improve emotional control, cognitive function and physical well-being.

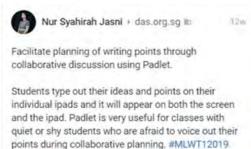
[e] Holding hands with Technology: M-Learning Week and Appy Hour

M-Learning Week (MLW) happens twice a year, in term 1 and term 3. During MLW, MLP EdTs post pictures or videos of their EdTech integration in the classrooms.

Usually, each round sees about 250 new posts. These posts serve as an indication of the level of use and proficiency in the integration of EdTech resources; and also inspire all MLP colleagues as they share and learn from each other.

Appy Hour is the reverse of MLW, whereby the EdTech team conducts sharing sessions, including hands on activities in the LCs and the EdTs discuss how they see the tools being implemented in their classrooms. The iReps, the MLP technology integration champions, facilitate this constructive discussion with suggestions on getting around the usage and management of the tools.











EDUCATIONAL THERAPIST COMMENTS

I used the apps for Language and vocabulary component to reinforce a concept of skill. I've used them to create quizzes. I find quizizz the most useful as it helps my lower ability students to have the audio aid when they are unable to read. In addition, it allows downloading of data for documentation purposes. Plickers was kind of troublesome with having to prepare the papers for each student, My students didn't enjoy using plickers for quizzes.

Teaching vocabulary to 14–15 year olds. Band A3–B4. Students were engaged. If it is pen and paper work sometimes they drift off. As activities are time and need their full attention they seemed to be more engaged.

I tried Quizzizz, which is a different version of Kahoot, and my students and I loved it for several reasons. Students get to answer the questions in their own time without feeling pressured, music was soothing and we're able to go through questions after the end of the quiz

8. ENGAGEMENT AND AWARENESS

In order to share what we do at the DAS, to build a community of practice, to create a knowledge sharing culture with like-minded professionals as well as to keep abreast with current perspectives and best practices, the ELL team conducts Learning Journeys and Awareness talks for teachers, school leaders, psychologists as well as Allied Educators (AEDs). Through such talks and learning journeys, we are able to raise awareness and increase the visibility of ELL's Main Literacy Programme (MLP) as well as our 2 new programmes iReaCH and iStudySmartTM. The intent of such professional sharing is to exchange good teaching practices, perspectives and strategies on how we, as professionals in the special needs community, can better support students with SpLDs.

ELL talks conducted for 2018:

DATE	ORGANISATION	SPEAKER	AUDIENCE	PAX
14 Aug 2018	Temasek Polytechnic	Ashraf and Geetha	Teachers	30
18 Oct 2018	W3 AED Cluster (Learning Journey)	Geetha, Serena and Hamada	Teachers	13
7 Nov 2018	North & North East Cluster (Learning Journey)	Mike, Serena and Rosalyn	Teachers	7
20 Nov 2018	Junyuan Primary School - Part 2	Serena	Teachers	18

9. TESTIMONIALS

Students' Reflections on how MLP has helped them cope with their literacy challenges

"Over the years, DAS has been a big part of my journey in picking up literacy skills and learning English. I have learnt many new vocabulary and writing techniques to help me with school projects and other non-curricular activities. Without DAS I would not have overcome the many obstacles I faced over the years of learning."

"It is hard to put into words how much I have changed since attending lessons at the DAS. The tremendous improvements I've made in my reading and writing were made possible with the support and help received from my teachers and classmates at the DAS. I cannot see myself being the same person I am today if I had not received intervention and support."

"DAS has helped me improve in many aspects of my English language, such as reading, spelling, comprehension, compositions and vocabulary building. I am thankful to the teachers who have been very patient with me, as I take time to read and spell words. My 5 years in DAS has been a fruitful experience."

Before I joined DAS 4 years ago, my reading and writing was horrible. I used to mix up letters and numbers until I attended lessons here and my reading and writing skills have improved ever since. My vocabulary expanded and I can read more fluently than before. I am also very grateful for the friendships I have forged with other students here. I want to say a big thank you to all the teachers who taught me.

It has been a very rewarding journey in DAS as I have gained valuable skills and knowledge. I am glad that my literacy skills have improved tremendously and I become more independent in my academics. I am thankful to my teacher for her dedication and support.

When I first stepped into DAS, I felt very nervous as I was afraid that my classmates would not like me. However, my classmates and teacher were very friendly and welcoming, which made me open up to them. I would definitely miss my teacher and classmates that have shaped me for 5 years. Now that I am graduating, I have gained so much knowledge about the English Language and have made many close friends in my class. I feel 100% more confident now, compared to the time I first stepped into DAS. Now I can share the knowledge with my peers in school and my family at home.

10. A SUCCESS STORY

YAA winner 2018 - Emily Yap. A Year 3 Ngee Ann Polytechnic student and former DAS student:

Emily Yap was struggling with her English from her primary school days. She used to get 2 out of 10 for her spelling and her school teacher used to reprimand her in front of her classmates. Some of her teachers encouraged her to continue to try harder and do their best to motivate her. Despite the encouragement and also working very hard after school and on weekends, she still did not fare well and was very discouraged.

Her parents have always remained supportive and encouraging. They always advised her not to give up but to give her best.



When she was in Sec 1, she came to DAS for an assessment. She was diagnosed with dyslexia and she started her remediation classes at DAS.

"My DAS teacher would come up with creative and fun ways to introduce new concepts and coping strategies, which were helpful to me and motivated me to work harder. In time, I moved on from normal academic to express stream in school. I completed my O' levels and took up nursing, which I was most passionate about, at Ngee Ann Polytechnic.

Nursing to me is not just an occupation to care for those who are in need, but it's also a great way to give back to society. I scored a GPA of 3.8 when taking my nursing course and I was pleasantly surprised when I was placed on the Director's list (a list where top students are shortlisted for). I also received an Edusave Certificate of Academic Achievement award and an Edusave Good Progress award in 2018.

Dyslexia, to me, is not a pigeonhole where there are limitations and constraints. It creates opportunities and possibilities as we learn differently. We have extraordinary brains that process information differently from an average person. We should not hold back our efforts and ideas. Therefore, one should never assume that you cannot achieve but make efforts to redefine your limits and move on, going beyond what you thought was impossible. And most of all, never give up!"

ABOUT THE AUTHORS



GEETHA SHANTHA RAM

Director of SpLD Assessment Services, English Language and Literacy Division, & Staff Professional Development and Head of Research

Geetha Shantha Ram joined DAS on 16 August 2004 and assumed the post of Director of the English Language and Literacy (ELL) Division on 1 December 2014, which includes the Main Literacy Programme (MLP) and has led curriculum enhancements for the DAS through the Essential Literacy Approach and the current integrated MLP curriculum.

Besides ELL, Geetha oversees the SpLD Assessment Service and Staff Professional Development division, where she led the development of professional pathways and quality assurance of all educational efforts. She also heads the DAS Research Committee and is an advisor in the Register of Educational therapists (Asia) (RETA). Formerly, the Assistant Director of the DAS Academy, Geetha trained Allied educators, parents and other professionals and continues to present at conferences, most recently at the 2019 Dyslexia Speld Foundation Conference in Perth.

Geetha has a Masters in English (NUS) and a Post Graduate Certificate in Learning and Teaching in Higher Education (Distinction) (LMU) and is currently pursuing her doctorate in the area of twice-exceptionality. With over 14 years of experience supporting children and adults in the area of dyslexia, Geetha aims to provide a quality service to dyslexics that searches for and realises their true potential and provides them with a view to appreciate their own unique abilities.



SUJATHA NAIR
Assistant Director, Quality Assurance
DAS English Language and Literacy Division

Sujatha joined the DAS in 2006 as an Educational Therapist and has over the years held the positions of Centre Manager and Resources Manager. Sujatha attained a Master of Education from The University of Adelaide in 2015 and a Bachelor of Business in Accountancy from Royal Melbourne Institute of Technology (RMIT) in 2001. Her other qualifications include a Cambridge International Diploma for Teachers and Trainers (Dyslexia) and a Diploma in Management Studies (SUSS). Sujatha is also a member of the Register of Educational Therapist Asia (RETA).



SERENA TAN ABDULLAHAssistant Director, Curriculum Development & Implementation,

Assistant Director, Curriculum Development & Implementation, DAS English Language and Literacy Division

Serena Abdullah is the Assistant Director with the English Language and Literacy (ELL) Division overseeing the development and the implementation of the curriculum at the DAS. She is also a Lead Educational Therapist who enjoys working and teaching children with learning difficulties. Her love and passion for teaching has led her to continuously seek new and innovative teaching methods to bring out the potential and self-confidence in her learners. She graduated with a Masters in Education (Curriculum and Teaching) from Nanyang Technological University/National Institute of Education (NTU/NIE) and has obtained a Cambridge International Diploma for Teachers and Trainers.

She hopes to continue enhancing the curriculum to ensure that learners from diverse backgrounds or those with varying learning needs benefit and learn effectively in class. Serena believes that every child progresses at their own pace but the process they take to reach the finishing line is what matters the most!

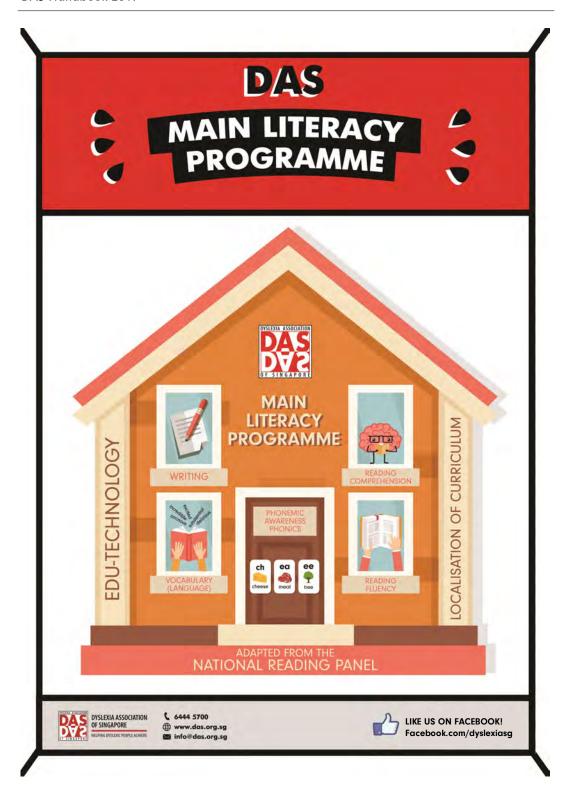


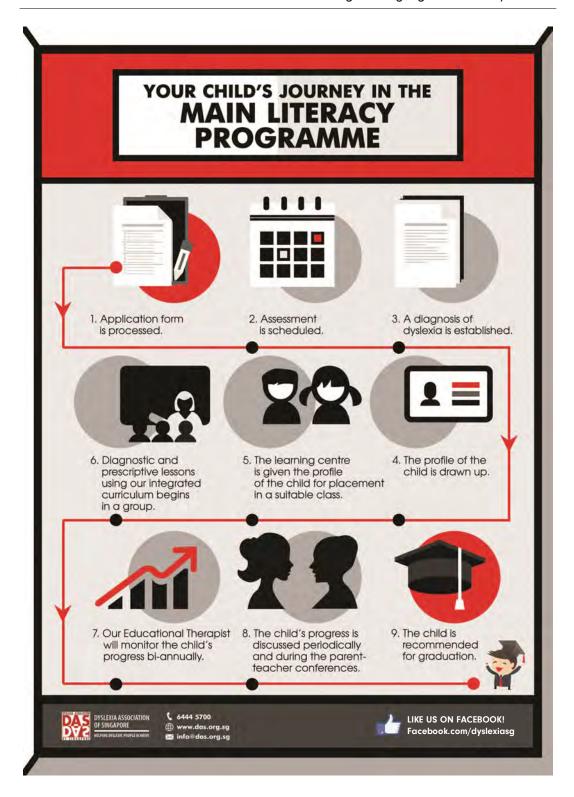
SOOFRINA MUBARAK

EdTech Coordinator and Senior Educational Therapist DAS English Language and Literacy Division

Soofrina joined the DAS Association in 2012 and is now the EdTech Coordinator for the ELL Division and also a Senior Educational Therapist. Through working with dyslexic learners, Soofrina developed the interest to incorporate educational technologies in the lessons to make the learning and teaching both efficient and within reach for all. Guided by the mantra "As slow as we must but as fast as we can", Soofrina explored classroom differentiation using EdTech tools and now passionately shares knowledge for the professional development of teaching colleagues.

With a Bachelor's Degree in Economics and Finance, Soofrina pursued post-graduate studies in Special Educational Needs and is currently sponsored by DAS to complete her Master of Arts (Instructional Design and Technology) in National Institute of Education (NIE).

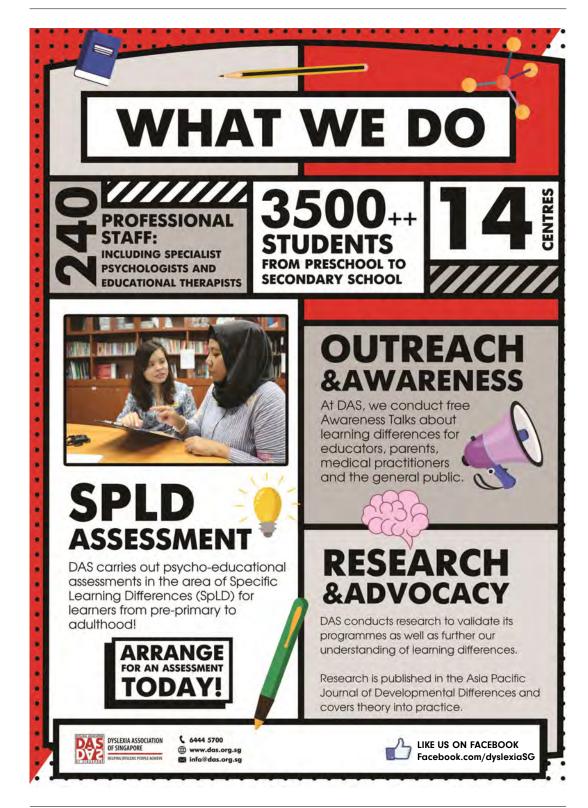






STAFF PROFESSIONAL DEVELOPMENT





DAS Staff Professional Development

Geetha Shantha Ram¹ and Manmeet Kaur²

- Director of SpLD Assessment Services, English Language and Literacy Division and Staff Professional Development and Head of Research
- 2. Staff Professional Development Division Executive and RETA Administrator

Dyslexia Association of Singapore

INTRODUCING THE STAFF PROFESSIONAL DEVELOPMENT (SPD) FRAMEWORK

DAS has well thought-out staff day activities through which staff have the opportunity to engage with each other in a casual setting.

DAS has also invested in training staff by funding their training with external agencies and in providing continued training throughout the staff's service in the form of in-service training. Annually, staff are also identified for conferences and further training, both local and overseas.

The implementation of the Staff Professional Development (SPD) branch is to further enhance the professional and career development of DAS staff and is a mark of the organisation's' commitment to staff welfare - by ensuring that staff are exposed to various strategies to effectively manage their job responsibilities - and to ensure that the service we offer is of the highest quality possible.

While DAS has career and professional development pathways for all staff, individual attention will be given to everyone's personal professional wants and individual initiated professional development is not only supported, its applauded. Wherever possible, opportunities to develop in the individual's area(s) of interest will be created.

Listed below is an elaboration of some of these platforms used by SPD to provide continued professional development for DAS colleagues.





[a] Attachments - learning from others and sharing what we know

There are 2 types of attachments at the DAS:

- ◆ Teachers from the Ministry of Education (MOE) and/or other Educational Institutes coming in to the DAS for lesson observation
 - ♦ The duration for the attachment is between 1 5 weeks
 - ♦ The Educational Therapist (EdT) who the teacher is attached to has to have a
 - ♦ minimum of 2 years' experience
 - Reports are requested from the teachers who attend attachments at the DAS

- DAS EdT's going for lesson observations to MOE schools and/or other Educational Institutes
 - ♦ SPD usually will liaise with schools to arrange for an attachment
 - ♦ We try to send at least 1—2 EdTs
 - Classes requested for observation -
 - At Primary Level Standard Class, Foundation Class, School-based
 Dyslexia Remediation (SDR) & Learning Support Programme (LSP)
 - ♦ At Primary Level Express, Normal Academic & Normal Technical
 - EdTs who go for these attachments are required to submit Professional Development (PD) Reports

The table below shows the number of attachments we have had in 2018:

DAS TO OTHER SCHOOLS	TO THE DAS		
A total of 11 EdTs have observed	A total of 8 teachers from 6 different schools have observed classes at DAS.		
classes in 5 different schools	1 Secondary 5 student observed a class as part of the criteria for her polytechnic admission		



[b] Teams Teaching Teams (TTT)

This is a yearly event, which SPD has been organising since 2013. It is compulsory for all staff to attend this event. The event encourages sharing of knowledge between staff and the topics shared range

from academic to non-

academic. We have at least 20 sessions, each of a 45 minute duration.

To view a sample site, please view this link: https://sites.google.com/a/das.org.sg/ttt—2018/

In 2018, we had a total of 15 presentations out of which 5 were 90 min sessions. From the 15, 6 were academic topics & 9 non-academic.





[c] Training - Internal & External

DAS is an organisation that is very pro-active when it comes to staff training. A report in 2015 showed that the DAS spends 7 times the national average on staff training.

Internal training consists of updating our staff with knowledge on the new programmes we offer, changes in processes where new systems are concerned and on enhancements to the curriculum and resources. Our staff also attends certificate courses conducted by the DAS Academy. Some of these courses are Professional Certificate Courses that our staff attend to be dual specialised in another programme (PREP 2 PSLE, Chinese, Speech & Drama, Mathematics, Preschool, Specialist Tutoring & Public Speaking)

External training is usually budgeted training that staff identify to attend to professionally develop themselves. A few of the external vendors that our staff go to for external training are the British Council, Social Service Institute & COMAT.

In 2018, a total of 168 staff attended paid training (this includes staff who attended more than 1 training course). A total of 1783 paid training hours were achieved, which is about an average of 10.6 hours per pax.

Staff are also encouraged to submit articles and/or do a sharing or training after attending training.

In 2018, we have had a total of 29 articles submitted by our English Language and Literacy Division (ELL) & Specialised Educational Services (SES) for the various publications – BLOG, FACETS & RETA Chronicles.



[d] Consultants

As we believe in training our staff, especially the EdTs to equip them with the expertise and knowledge to develop themselves, so that our children benefit from what they are taught, we engage consultants.

We have a Research Consultant Professor Angela Fawcett and programme specific consultants who guide both ELL and SES programmes. These consultants give their views on how to improve teaching resources as well as feedback on any research that takes place within the DAS



2. RESEARCH

At the DAS, staff are encouraged to conduct research. Some of these research are initiated by staff and some are proposed by the DAS for staff to conduct. The research findings are then presented at local and/or overseas conferences and journal articles written to be ournals such as the Asia Pacific Journal of Developmental Differences

published in journals such as the Asia Pacific Journal of Developmental Differences (APJDD).

Any research requested that requires our students and/ or staff to be involved has to go through the Research Committee for approval. Researchers are required to complete a Research Application form and submit all supporting documents such as consent forms, survey questions, etc. These are then reviewed by the Research Committee who will provide feedback two weeks from the date the application is received. If no amendments are required, an approval letter will be sent to the researchers to proceed with the research.

[a] Asia Pacific Journal of Developmental Differences - A peer reviewed journal



The Asia Pacific Journal of Developmental Differences (APJDD) is a peer-reviewed journal published by the Dyslexia Association of Singapore. It is a journal that is unique in addressing a range of special educational needs including dyslexia, autism, dyspraxia, dyscalculia, and ADHD.

The journal covers theory into practice and provides a showcase for research in the Asian context as well as highlighting research areas that have implications for further research within Asia and beyond.

In FY 2018 we had a total number of 14 journal articles published. These were a combination of submissions by both the DAS staff as well as external researchers.

The articles contributed by our DAS colleagues are as follows:

NO.	NAME	TITLE		
1	Shen Peixin Priscillia, Kong Yun Rui, See Lay Yen & Sha Lan in collaboration with Dr Tan Ah Hong (NTU / NIE)	Assessment of the Effectiveness of a Chinese Literacy Assessment tool for School Learners in Singapore		
2	Wong Kah Lai & Shakthi Bavani D/O Sathiasilan	Evaluating an early literacy intervention in Singapore		
3	Sujatha Nair, Geetha d/o Shantha Ram & Puvaneswari D/ O Kurusamy	Evaluating reading and spelling performance of students with dyslexia using curriculum based assessments and teacher perception		
4	Tuty Elfira bte Abdul Razak, See Hui Zi Emilyn, Tan Shi Huey Joanne & Leong Mingjian Edmen	Exploring the effectiveness of the English Examination Skills Programme on struggling non-dyslexic learners		
5	Weng Yiyao	Exploring the effectiveness of the Family Literacy Programme with Singaporean preschool children at risk of literacy difficulties		

After the completion of the research, researchers who wish to submit their journal article to be published with APJDD will have their papers reviewed by the Editor-in-Chief and two other reviewers either from the Editorial Board or from the Scientific Board before finally being published.

[b] Editorial Board Members and the Scientific Review Committee

ASIA PACIFIC JOURNAL OF DEVELOPMENTAL DIFFERENCES—EDITORIAL BOARD MEMBERS

EDITOR-IN-CHIEF

Professor Angela Fawcett, DAS Research Consultant, Emeritus Professor Swansea University, Honorary Professor, University of Sheffield.

EXECUTIVE EDITOR

Professor John Everatt, University of Canterbury, New Zealand

ASSOCIATE EDITORS

Professor Hugh Catts, Florida State University, USA

Professor James Chapman, Massey University, New Zealand

Professor Steve Chinn, Educational Consultant, UK

Professor Kevin Kien Hoa Chung, The Education University of Hong Kong, Hong Kong

Kate Curawalla, President, Maharashtra Dyslexia Association, Mumbai, India

Dr Kristiantini Dewi, Dyslexia Association of Indonesia, Indonesia

Dr Shirley Egley, University of Wales, University of South Wales, UK

Dr Gad Elbeheri, Dean, Australian College of Kuwait

Professor Ester Geva, University of Toronto, Canada

Dr Aziz Abu Hassan, Vice President, Dyslexia Association of Malaysia

Professor Connie Ho, University of Hong Kong

Professor Sunil Karande, King Edward VII Memorial Hospital, Mumbai, India

Junko Kato MD, Japan Dyslexia Research Association

Professor Sharanjeet-Kaur, Universiti Kebangsaan Malaysia

Dr Lim Boon Hock, Special Education Consultant, Malaysia

Dr Beth O'Brien, National Institute of Education, Singapore

Dr Dina Ocampo, Philippine Dyslexia Foundation, Philippines

Professor Ong Puay Hoon, Dyslexia Association of Sarawak, Malaysia

Professor Kenneth Poon, National Institute of Education, Singapore

Dr Gavin Reid Educational Consultant, Canada

Associate Professor Susan Rickard Liow, National University of Singapore, Singapore

Dr Kate Saunders, Private Consultant, UK

Dr Thomas Sim, Australian Institute of Professional Counsellors, Australia

Geetha Shantha Ram, Director & Head of Research, Dyslexia Association of Singapore.

Dr Purboyo Solek, Dyslexia Association of Indonesia, Indonesia

Professor Su-Jan Lin, National Kaohsiung Normal University, Taiwan

Professor Akira Uno, Tsukuba University

Professor Taeko N. Wydell, Brunel University, UK

Associate Professor Dongbo Zhang, University of Michigan, USA (formerly National Institute of Education, Singapore)

Between September to November 2018, DAS initiated and established the Scientific Review Committee. The role of the Scientific Review Committee members is to review up to 2 articles per year for the Asia Pacific Journal of Developmental Differences (APJDD) as instructed by the Editor-in-Chief.

We had invited 18 candidates to be members out of which 16 accepted. These 16 include 4 DAS Staff who are on the Research Committee.

The following are the members:

SCIENTIFIC REVIEW COMMITTEE

Dr. Shaimaa Abdelsabour, Researcher and Teacher of English, Ministry of Education, Kuwait

Dr Yousuf Almurtaji, Lecturer, Public Authority for Applied Education & Training, Kuwait

Dr Amanda Denston, Researcher, University of Canterbury, New Zealand

Pei Yi Fong, Specialist Psychologist, Dyslexia Association of Singapore, Singapore

Dr Janet Hoskin, Senior Lecturer Special Education, University of East London, United Kingdom

Kwok Fuyu, Research Fellow, NIE, Office of Education Research, Singapore

Edmen Leong, Director, Specialised Educational Services, Dyslexia Association of Singapore

Dr Emma Moore, Edinburgh University, Department of Music, United Kingdom

Sharyfah Nur Fitriya, Senior Educational Therapist & Educational Advisor, Dyslexia Association of Singapore, Singapore

Dr Neil Alexander-Passe , Head of AEN/SENCO (SEN Researcher & Author), Additional Educational Needs, East Barnet School, London

Suvarna Rekha, Consultant Psychologist at IIIT-Hyderabad & Moolchand Neurocenter, India

Dr Amir Sadeghi , Assistant Professor for the Department of English Language Teaching, Islamic Azad University, Damavand Branch in Iran & Adjunct Researcher for the Language and Literacy Research Lab, University of Canterbury, New Zealand

Ami Sambai, Assistant Professor, University of Tsukuba. Japan

Perle Seow, Specialist Psychologist, Dyslexia Association of Singapore, Singapore

Dr Pawadee Srisang, Lecturer, Science and Arts, Burapha University, Chantaburi campus, Thailand

Thomas Wilcockson, Lecturer, Loughborough University, United Kingdom

[c] Approved Research

As DAS continues to invest time and resources in ensuring that the services offered are evidence-based and effective, other aspects of research development are also encouraged, so that services continue to be enhanced and have the opportunity to grow. Research, therefore is critical as it feeds into our provision of support.

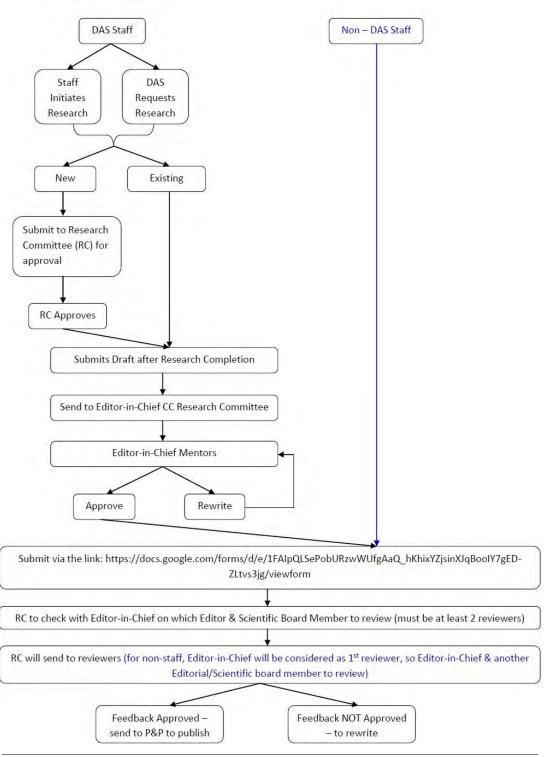
TABLI	TABLE 1: APPROVED RESEARCH								
NO	NAME	WHO	RESEARCH TITLE	YEAR	NATURE OF RESEARCH				
1	Seet Xian Hui, Susan Rickard & Siok Keng	NUS & DAS	Using sentence repetition to assess language in bilingual dyslexic children	2018	New initiatives and viability				
2	Shahirah Begum Binte Sulaiman	NTU	Investigating the Effect of Romanization on Chinese Character Learning in Dyslexic and Non-dyslexic English-Chinese Bilingual Child Readers	2018	New initiatives and viability				
3	Porayath Sathi Menon D/O Kunju Rama	DAS	Perspectives of Trainee Educational Therapists in Singapore	2018	Gaps in programming / areas of importance in current perspectives				
4	Shakthi Bavani D/O Sathiasilan, Wong Kah Lai & Weng Yiyao	DAS	Investigating the impact of the Preschool Intervention Programme on struggling learners	2018	Research on efficacy (per prog.)				
5	Tan Serena @ Serena Tan Abdullah, Wee Qi-Mei Rosalyn & Wah Pheow	DAS & TP	Effectiveness of a blended learning model that delivers study skills curriculum to students with learning differences	2018	Research on efficacy (per prog.)				
6	Tan Shi Huey Joanne	DAS	Motivation and Vocational Decision of Secondary School Students with Dyslexia	2018	Research on efficacy (per prog.)				

TABLE 1: APPROVED RESEARCH (CON'T)								
NO	NAME	wно	RESEARCH TITLE	YEAR	NATURE OF RESEARCH			
7	Anisa, Wei Xiang, Aisyah, Samuel & Verity	SMU	Bullying dyslexic children face in schools New title: Victim-focused solutions on bullying of dyslexic children	2018	Gaps in programming / areas of importance in current perspectives			
8	Ho Yun Xin Glenn	NTU	Morphological Processing on Sentence Comprehension in Chinese among Dyslexic and Reading-Level Matched Non-Dyslexic Children in Singapore: An ERP Study	2018	New initiatives and viability			
9	Wei Quin, Yee Ning, Tharshini & Nuran	SUTD	Evaluation of Finger Reader as a learning aid for children with Dyslexia	2018	New initiatives and viability			
10	Jereld, Desirae, Yansun, Keith & Kajol	SMU	Managing Creativity in Organisations- A Study of the Dyslexia Association of Singapore	2018	New initiatives and viability & Gaps in programming / areas of importance in current perspectives			
11	Angle, Carmel, Phyllis, Darrell, Su Yi, Tony & Rae	NUS	Research on the support for Dyslexic students in Singapore	2018	Research on efficacy (per prog.) & Gaps in programming / areas of importance in current perspectives			

To achieve that end, we have classified the research into 3 different categories:

	NATURE OF RESEARCH	
1. Research on efficacy (per prog.)	2. New initiatives and viability	3. Gaps in programming / areas of importance in current perspectives
4	5	4

Flowchart for Journal Articles



We had 12 research requests and 11 were approved. Out of these 12, only 3 were by DAS staff while 7 were from external institutes – National University of Singapore (NUS), Nanyang Technological University (NTU), National Institute of Education (NIE), Singapore University of Technology & Design (SUTD) & Singapore Management University (SMU).

The 2 collaboration we had were with Temasek Polytechnic (TP) and National University of Singapore (NUS).

RESEARCH APPLICATION RECEIVED IN 2018								
Approved	Not Approved	DAS Staff	Non-DAS Staff	Collaboration between Staff & another Institute				
11	1	3	2					
1	2		12					

4. CONFERENCES WITHIN AND OUTSIDE SINGAPORE

[a] Sharing our findings - UNITE SpLD, a DAS organised conference.

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 showcases research that covers aspects of behavioural, literacy and social well-thought-out emotional support, intervention and assessment for children with special learning needs. Research is typically presented in 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.

In 2018, the UNITE SpLD Conference took place between 20th to 22nd June 2018.

At the pre-conference on 20th June 2018, we had four workshops in the morning:

- Helping Upper Primary of Lower abilities Learn ELL
- ♦ The SES Chinese Classroom
- ♦ Welcome to Speech and Language Therapy in DAS
- ♦ The SES Maths Experience

In the afternoon, we had a Learning Journey to Anderson Primary School and a sharing session by the ELL EduTech Team and DAS Academy

The main conference was on 21st and 22nd June 2018 where we had:

- ♦ 4 Streams:
 - ♦ Research stream 12 presentations
 - ♦ Practical Research stream 12 presentations
 - ♦ Teaching Practical Workshops 5 workshops
 - Parent Workshops 5 workshops

♦ 4 Keynotes:

- Geetha Shantha Ram Technology Advancing Education
 Susan Rickard Liow, Mary Lee Lay Choo, Tng Siok Keng &
 Elizabeth J. Teh Profiling Children at-risk for Language, Literacy
 and Learning Difficulties in Heterogeneous Bilingual Populations
- Wong Meng Ee & Deborah Chua Exploring Assistive Technology to Support Students with Dyslexia: Introducing Possible Solutions
- John Everatt Relationships Between Language and Literacy Development and Academic Self-Efficacy and Resilience
- ♦ 12 Poster Presentations
- A total of 64 presenters:
 - ♦ DAS Staff 25
 - ♦ Non DAS Staff (Local) 15
 - Non DAS Staff (Overseas) 24

[b] Presentations at other conferences

The following are the conferences presented at:

LOCAL/OVERSEAS	NO. OF CONFERENCE	NO. OF PRESENTATIONS
Local	6	9
Overseas	3	9

NO	CONFERENCE	LOCAL/ OVERSEAS	NO. OF PRESENTATI ONS
1	British Dyslexia Association Conference 2018	Overseas	5
2	United World College of South East Asia (UWCSEA) Re-Thinking Learning 2018	Local	2
3	Asian Festival of Children's Content (AFCC) 2018	Local	2
4	Early Childhood Development Agency (ECDA) 2018	Local	1
5	EduTech Asia 2018	Local	1
6	Educational Research Association of Singapore (ERAS) Asia-Pacific Educational Research Association (APERA) International Conference 2018	Local	2
7	International Dyslexia Association (IDA) 2018	Overseas	3
8	Association for Reading and Writing in Asia (ARWA) 2018	Overseas	1
9	53rd RELC International Conference 2018	Local	1

	POSTER PRESENTATIONS AT UNITE SPLD 2018							
1	Soleha Binte Razali	The effectiveness of memory games in improving fluency and reading comprehension of children with dyslexia						
2	Wai Kuen	How I guide a child with language development delay						
3	Sudha Ramasamy	Developing A Dyslexia-Friendly Environment in classroom						
4	Takashi Gotoh	The effects of font type on reading accuracy and fluency in Japanese children with developmental dyslexia						
5	Dhita Natasha Dwiriyanti, Dian Larassati & Yoan Utami Putri	Profile of Children with Expressive Language Delay in Zainab Hospital Pekanbaru, Indonesia						
6	Dian Larassati, Yoan Utami Putri & Dhita Natasha Dwiriyant	Association Between Screen Time and Expressive Language Delay Children in Zainab Hopital Pekanbaru, Indonesia						
7	Yoan Utami Putri, Dian Larassati & Dhita Natasha Dwiriyant	Risk Factors Identfication in Children with Expressive Language Delay in Zainab Hospital Pekanbaru, Indonesia						
8	Omar Hassan	"I Read and Write!" Evaluation a Multi-Sensory Structured Language (MSL) Programme for Arabic						
9	Elizabeth Ow Yeong Wai Mang	"An Autoethnographic Exploration in the search for the Enhancement of Learning for Students with Special Needs						
10	Angelica Benson & Andy Russell	The Imagery-Language Foundation: Teaching All Children to Read and Comprehend						
11	Suvarna Rekha Chinta	Effects of Executive Attention Deficits in Children with Dyslexia: Beyond Phonology in Bilingual Dyslexics						
12	Maria De Palma, Uma Kulkarni & Maureen W. Lovett,	Rolling out an evidence-based Intervention for struggling learners and providing professional development for teachers through a global partnership in India: A pilot project.						

Learning and Growing together: Bringing our Professionals Together as a Community of Practice — RETA

Register of Educational Therapists (Asia) – RETA, is an initiative by the Dyslexia Association of Singapore to bring together practitioners in the field of specific learning differences while at the same time recognizing their professional status and endorsing their qualifications. RETA has two advisors representing both the local and international needs and standards:



Professor Angela Fawcett
Registrar, Register of Educational Therapists (Asia)
Research Consultant, Dyslexia Association of Singapore

Angela is a leading international researcher into dyslexia and other learning differences, with a range of theoretical and applied contributions. Angela is now Emeritus professor at Swansea University, following her retirement in January 2011 and has completed an honorary professorship at Sheffield University. She was awarded a 2-year Leverhulme Emeritus fellowship until March 2014, to complete her research projects in Wales. She is one of the co-authors of the Dyslexia Screening Test (DST) and her visit to India in July 2012 to lecture at the World Education Summit generated 45 articles in the press on the launch of the DST-J India. Angela is Academic advisor to the DAS, and editor of the APJDD.



Ms Geetha Shantha Ram
Director of SpLD Assessment Services, English Language
and Literacy Division, and Staff Professional Development
and Head of Research

Geetha Shantha Ram joined DAS on 16 August 2004 and assumed the post of Director of the English Language and Literacy (ELL) Programmes on 1 December 2014, which includes the Main Literacy Programme (MLP) and has led curriculum enhancements for the DAS through the Essential

Literacy Approach and the current integrated MLP curriculum. Besides ELL, Geetha oversees the SpLD Assessment Service and Staff Professional Development division, where she led the development of professional pathways and quality assurance of all educational efforts. She also heads the DAS Research Committee and is an advisor in the Register of Educational therapists (Asia) (RETA). Formerly, the Assistant Director of the DAS Academy, Geetha trained Allied educators, parents and other professionals and continues to present at conferences, most recently at the 2019 Dyslexia Speld Foundation Conference in Perth. Geetha has a Masters in English (NUS) and a Post Graduate Certificate in Learning and Teaching in Higher Education (Distinction) (LMU) and is currently pursuing her doctorate in the area of twice-exceptionality. With over 14 years of experience supporting children and adults in the area of dyslexia, Geetha aims to provide a quality service to dyslexics that searches for and realises their true potential and provides them with a view to appreciate their own unique abilities.

RETA CASE MANAGEMENT SESSIONS

The following are the sessions we had in 2018:

21 June 2018 - Case Management at UnITE SpLD 2018

by Sujatha Nair & Hani Zohra Muhamad and Angela Fawcett as moderator



A sharing session on strategies and methods to use when managing the behavioural needs of students with special learning needs and the type of support to provide them with.



25 June 2018 - Case Management session

by Hani Zohra Muhamad and Janitha Panicker and Angela Fawcett as moderator.

This was a sharing session in collaboration with the DAS Parents' Support Group (PSG) where both Hani & Janitha shared some cases on behavioural management. The session was an interactive one where different scenarios were shared and how a particular child or situation is dealt with. The PSG parents shared some of their situations and Angela, Hani & Janitha responded with some strategies that would help them cope.

3 October 2018 - Helping your Child - Dyslexia, ADHD & Behaviour by Tina Tan from SPARKS



Another sharing session in collaboration with PSG.
Tina shared her personal experience with her son and how she helped him.
She also shared the help she sought and about ADHD - the situations faced, how to deal with kids with ADHD. This was followed by an open discussion and sharing by parents on what their experiences are as a parent of an ADHD child.
As of 2018, there were 176



RETA members, amongst them are 4 non-Singaporean members who are from Pakistan, 1 from Philippines and 2 from Indonesia.

To find out more about RETA and become a member, please visit www.reta.sg.

ABOUT THE AUTHORS



GEETHA SHANTHA RAM

Director of SpLD Assessment Services, English Language and Literacy Division, & Staff Professional Development and Head of Research

Geetha Shantha Ram joined DAS on 16 August 2004 and assumed the post of Director of the English Language and Literacy (ELL) Division on 1 December 2014, which includes the Main Literacy Programme (MLP) and has led curriculum enhancements for the DAS through the Essential Literacy Approach and the current integrated MLP curriculum.

Besides ELL, Geetha oversees the SpLD Assessment Service and Staff Professional Development division, where she led the development of professional pathways and quality assurance of all educational efforts. She also heads the DAS Research Committee and is an advisor in the Register of Educational therapists (Asia) (RETA). Formerly, the Assistant Director of the DAS Academy, Geetha trained Allied educators, parents and other professionals and continues to present at conferences, most recently at the 2019 Dyslexia Speld Foundation Conference in Perth.

Geetha has a Masters in English (NUS) and a Post Graduate Certificate in Learning and Teaching in Higher Education (Distinction) (LMU) and is currently pursuing her doctorate in the area of twice-exceptionality. With over 14 years of experience supporting children and adults in the area of dyslexia, Geetha aims to provide a quality service to dyslexics that searches for and realises their true potential and provides them with a view to appreciate their own unique abilities.



MANMEET KAUR

Staff Professional Development Executive and RETA Administrator

Manmeet Kaur joined DAS in 2013 as an Administration Officer for the Staff Professional Development (SPD) Division and was promoted to an Executive in 2015. Throughout her time, she has supported the SPD Division on staff training needs and assisting the Educational Advisors with administrative support. She organises the yearly DAS Teams Teaching Teams event since 2014. In 2015, she took on two other portfolios Administrator for RETA (Register of Educational Therapists Asia) and Research Coordinator. She has been on the UNITE SpLD Committee, assisting with the conference administrative needs since 2016 and always looks forward to assisting DAS colleagues to find the best professional development options so that they can provide quality services to DAS clients.





DAS SPECIALISED EDUCATIONAL SERVICES PROGRAMMES

SES is a division of the Dyslexia Association of Singapore



Specialised Educational Services UNLOCKING POTENTIAL

DAS SPECIALISED EDUCATIONAL SERVICES

The Specialised Educational Services (SES) is a division of the Dyslexia Association of Singapore.

OUR VISION

Nurturing persons with learning differences to achieve success and impact society positively.

OUR MISSION

Unlocking the potential of individuals with learning differences.

SES programmes offer support to students who struggle to learn in other academic subjects and also offers talent development programmes. SES programmes are tailored to fit the learning needs of students with a learning difference.

All of our programmes are tailored to fit the learning needs of students with learning differences. The curriculum and the methodology adheres to the principles which have been proven to be beneficial in helping them learn.

All of our programmes are:

- 1. Structured, Sequential and Cumulative
- 2. Flexible
- Multisensory
- 4. Direct and Explicit
- 5. Cognitive
- 6. Emotionally Sound

DAS Specialised Educational Services Our Programmes

The Specialised Educational Services (SES) is a division of the Dyslexia Association of Singapore which aims to uncover the true strengths of individuals with learning differences and empower them with the necessary skills and strategies to succeed.

All of our professionals are highly qualified and specially trained to help persons with learning differences who may be struggling in different areas of their lives. We have a good understanding of the curriculum and the demands that today's education systems place on a student and strive to bring out the very best in every individual that we see.

All our classes have a low teacher to student ratio, with an average of four students in a class, except for our Speech and Drama Arts Programme. This arrangement enables us to attend to the individual needs of your child and maximise learning opportunities for success.

Programmes that are offered by SES:

- ♦ Maths
- ♦ Chinese
- ♦ Preschool
- Speech and Drama Arts
- ♦ Speech and Language Therapy
- ♦ English Exam Skills
- Science Explorers
- ♦ ArtVenture
- Holiday Workshops



DAS SPECIALISED EDUCATIONAL SERVICES

www.das.org.sg/services/about-our-services/specialised-educationalservices.html Scan me to find out more!

Specialised Educational Services

UNLOCKING POTENTIAL

ARTVENTURE PROGRAMME

OUR APPROACH

As we drive towards helping students with dyslexia achieve through the various programmes to support them, often students strengths are not accentuated.

ArtVenture exists to complement the wide range of academic programmes we have to support our students, to recognise our students' talents in art and to help them ignite their stories in various artistic forms.

ArtVenture aspires to celebrate the uniqueness of art from a dyslexic's perspectives and be an active voice of positive dyslexia through the use of art.

OUR OBJECTIVES

ArtVenture – launched in 2016 as a platform for our students to showcase their passion and strengths, apart from their everyday academic pursues.

ArtVenture inculcates mindsets of positive dyslexia to the mass and strives to change the way people perceive 'disadvantages' found in having dyslexia to 'advantages', through a change of perspectives.

DAS Specialised Educational Services ArtVenture Programme

Nicole Chua

ART Venture Programme Manager and Lead Educational Threapist Dyslexia Association of Singapore

INTRODUCTION

As we drive towards helping dyslexics achieve through the various programmes to support them, often dyslexics' strengths are not accentuated. ARTVenture exists to complement the wide range of academic programmes we have to support our students, to recognise our students' talents in art and to help them ignite their stories in various artistic forms.

ARTVenture believes in nurturing and developing a child's talent through the eyes of a dyslexic. Only when we are able to appreciate the world from their perspective, will we be able to understand and nurture the strengths they never knew they have. In the process, developing a deeper understanding of themselves, leading to an increase in self-esteem and eventual personal success.

ARTVenture aspires to celebrate the uniqueness of art from a dyslexic's perspectives and be an active voice of positive dyslexia through the use of art.

PROGRAMME DESCRIPTION

Essential Elements of Visual Arts

Many of our children with dyslexia display a keen interest in arts that is often uniquely different from their peers.

ArtVenture inaugurated our children's uniqueness through a customised program that embraced art from their perspectives.

Essential Elements of Visual Arts aims to provide essential tools to bring out their artistic minds. Some of these include:

- Basic drawing knowledge i.e. lines, shapes forms
- Mixed Media Techniques
- How to present and interpret their artwork

Throughout the program, students will produce a series of artworks using various mediums from everyday objects to human subjects. Selected art pieces will be displayed at DAS events and/or a lifetime opportunity to be sold at fund-raisers or on our website at artist's request with a portion of the sale going to the artists themselves.

Entry Criteria

ARTVenture 10-week programme is currently open to both DAS and non-DAS students. The program is currently designed for primary 1 to primary 6 students.

Exit Criteria

Students automatically exit the program at the end of ten weeks.

Who the Programme is for

Students who have a keen interest in art and a desire to venture deeper into the technical aspect of drawing, colouring and painting.

NEW INITIATIVES TAKEN FOR 2018

Short Term Programmes

One of the two main initiatives taken for this year was to develop a structured art programme that suits our students' learning profiles. To ensure that our programme is set apart from other commercial art programmes for children, our educational therapists with art studies background were roped in to help develop the art talent development programme that not only imparts the technical aspects of drawing but also cater to focus on drawing out their artistic minds.

The current short term programmes currently cater to students from primary 1 to primary 6.

Public Engagement Events

As a relatively new programme at the DAS, it was important for ARTVenture to engage both internal and external stakeholders.

Art as Therapy

ARTVenture conducted its first workshop for parents through the collaboration with DAS Parents' Support Group. The support from DAS parents was heartening and children were able to spend quality time with the parents. ARTVenture will be conducting more workshops for parents to help raise awareness of artistic talent among children who have dyslexia.

External Art Events

ARTVenture actively participates and collaborates with external parties to provide platforms for our students to display their talents. This year ARTVenture took part in various events such UOB Chinese New Year Auctions and World Dyslexia Awareness Week. Both events have garnered much interest from the public with paintings being auctioned for charitable causes or given as gifts to honourable guests at events.

ENGAGEMENT AND AWARENESS

PSG Workshop (Art as Therapy)

The Art as Therapy workshop, in collaboration with the Parent Support Group, was held on 25 August 2018, at Rex Learning Centre. Participants worked together as parent and child, to create an artwork themed around "Love". From this workshop, parents got an opportunity to bond with their child, through questioning techniques and reflections on their artwork.

World Dyslexia Awareness Weeks & OnePeople.Sg

ArtVenture took part in the organisation-wide exhibition that was held at One People.Sg in Toa Payoh during the World Dyslexia Awareness Week 2018 in October. The event attracted members of the public who were keen to know more about dyslexia or are already living with people with dyslexia. The gallery exhibition was to showcase other talents of dyslexia and help the public understand that there are other strengths that could arise from having dyslexia.



Art as Therapy workshop, in collaboration with the das Parent Support Group



Art Exhibition at One People.Sg Toa Payoh during the World Dyslexia Awareness Week 2018



DAS student artworks were displayed at UOB Atrium at Raffles Place during WDAW 2018





Two artworks that were auctioned off during the UOB Chinese New Year Dinner

World Dyslexia Awareness Week (WDAW) 2018 — UOB Event during

In collaboration with UOB, students' artworks were displayed at UOB Atrium at Raffles Place, on 5 October 2018. The artworks were on display for the public and were open to being auctioned for a charitable cause.

UOB Chinese New Year Dinner Auctions

On 11 February 2019, we were invited to present our student artworks for auction. It was indeed a great opportunity for our students to showcase their artistic minds and be acknowledged. Our students came up with two artworks that were auctioned off during the UOB Chinese New Year Dinner. The artworks fetched a price of \$1500 and \$1088 respectively and were auctioned as part of UOB support for DAS ArtVenture

Artworks for VIP Gifts

Through the financial year, there were many opportunities for students to contribute their artwork as a token of appreciation to VIPs during visits and special events. These platforms play an important role in securing art as a true strength of someone with dyslexia and raising awareness to the public of the various advantages that can be found in having dyslexia.

Voyage of Turtles

By: Morrison Liew (14), Amir Athaullah (15) and Dexter Lim (14) Students from Tampines Learning Centre, Mohamed Faisal bin Mohamed (EdT)



"Baby turtles are portrayed hatching from eggs, venturing into the deep ocean.

Turtles are symbols of persistence and determination. The baby turtles progressing into the ocean represent the journey we have ahead of us. The journey into the ocean is filled with challenges, but we are determined to give it our best, against all odds."

An appreciation gift for Education Minister Ong Ye Kung

Every blink of a firefly's light says... Believe!

By: Arata Nakajima (9), Ashlyn Loo (9) & Kane Chia (8) Students from Queenstown Learning Centre, Muzdalifah Hamzah (EdT)

Fireflies are charismatic creatures. And to some, they are mysterious and magical. Fireflies are symbols of hope and inspiration. Even though tiny on their own, fireflies have a unique place in the entire ecosystem.

Just like fireflies, children with dyslexia are talented individuals waiting for opportunities to shine their innate abilities and strengths to the world. Let us give our children hope to believe in their strengths, just like the fireflies they will 'glow'.

A gift for Ms Indranee Thurai Rajah Minister, Prime Minister's Office, Second Minister for Finance & Second Minister for Education





DAS Student Graduation and Awards Ceremony 2018

Token of Appreciation to Mr Ng Chee Meng, Minister Prime Ministers Office

A Celebration By Katie Tan, 10, DAS Student

Katie interpreted the theme celebration as joy and success. She painted a girl in red representing passion. The girl symbolises a DAS Student, walking on a road towards scenery of mountains and trees. The mountains represent obstacles in live, while the trees represent the strength to carry on. In addition, the girl holds onto colourful balloons, which represents hopes and dreams

Even when a balloon bursts, fireworks appeared to light up the sky to show that even when hopes and dreams do not go the way you planned it to be it will result in a positive outcome, like fireworks lighting up the dark sky.



Through the financial year, there were many opportunities for students to contribute their artwork as a token of appreciation to VIPs during visits and special events. These platforms play an important role in securing art as a true strength of someone with dyslexia and raising awareness to the public of the various advantages that can be found in having dyslexia.



ABOUT THE AUTHOR



NICOLE CHUA *ARTVenture Programme Manager and Lead Educational Therapist*

Nicole joined DAS on the 23 March 2009. Over the years she has been with the DAS, she has obtained a Masters degree in Specific Learning Differences (SpLD) with London Metropolitan University, UK, and have been trained in the Orton-Gillingham Approach and Project Read. She was been teaching children with specific learning needs since 2009 and is experienced in conducting intervention for dyslexic learners from all age groups and also learners with other learning needs that require literacy-based intervention.

In her years at the DAS, Nicole was part of the Curriculum Development team and oversaw the development of an Advanced Writing Pack. She conducted training for new and existing teachers on how to teach writing to higher ability learners. Her passion and love for writing have led to the start of the DAS Creative Writing Workshop series which she infuses Orton-Gillingham teaching approaches into all learning activities to give children with learning differences an edge in learning. Nicole has conducted a string of very well-received workshops since the series launched in 2013.

Nicole currently leads the ARTVenture Programme and Holiday Workshops at the DAS as a Programme Manager. This is on top of her role as a dedicated Lead Educational Therapist. Her role as Programme Manager is key to the efforts of DAS to raise awareness of a dyslexic learner's strengths and talents through events. Nicole's background involvement in grassroots and event management provides her with knowledge and experience in overseeing ARTVenture events and Holiday Workshops at the DAS.

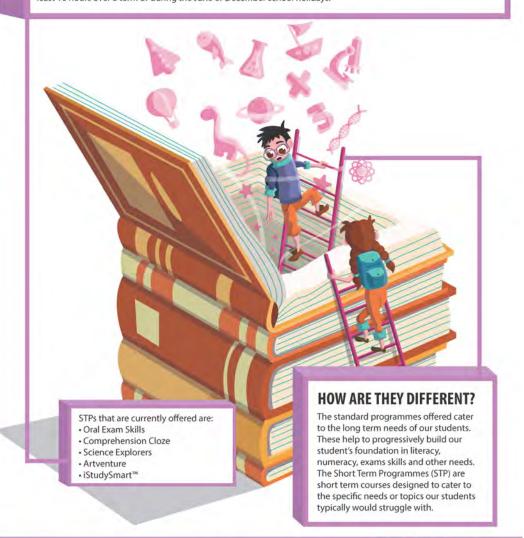
Nicole, also a keen researcher. She presented at The Fifth Asian Conference on Education 2013 (ACE2013) in Osaka, Japan. RehabTech Asia Conference 2013 in Singapore, International Conference "ICT for Language Learning 2012" in Florence, Italy, and Success with Technology, Singapore's first conference in Assistive Technology in 2011.



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SHORT-TERM PROGRAMMES

DAS Short Term Programmes (STPs) are designed to provide students with skills, strategies and exposure to various subject matters or topics that will enhance their preparedness and confidence in their school work and unleash their talents in the areas of their interest. Each STP would focus on a specific subject content. The STPs would run for at least 10 hours over a term or during the June or December school holidays.



For more info, visit www.das.org.sg

Specialised Educational Services UNLOCKING POTENTIAL

CHINESE PROGRAMME

The aim of the SES Chinese Programme is to help students with dyslexia become independent, inquisitive learners in the Chinese language. The programme focuses on the following aspects to help increase efficiency in learning and interest in the Chinese language:

- Common vocabulary and sentence structure to enhance learner's expressiveness in Chinese
- Word recognition strategies instruction to enhance learner's ability to recognise Chinese characters.
- Morphological awareness to expand learner's vocabulary network
- Reading comprehension and writing strategies instruction for learner to gain competency in higher order literacy skills.

OUR APPROACH

The programme helps to foster your child's interest in the language through thematic-based teaching. In this way, vocabulary covered is relatable and can be used on a daily basis, allowing them to express themselves better in the language. Students are taught interactively with the use of stories, educational games and hands-on activities to make language learning a fun and memorable experience for them. This also helps to minimise the child's stigma towards the language and build up their confidence and motivation to learn the language. Lessons are also structured in a way to increase efficiency in learning the language through the instruction of character structure, radicals, stroke pattern, word recognition strategies and understanding how words are combined together.

Components covered in a typical lesson:

- 1. Word Recognition
- 2. Vocabulary Instruction
- 3. Teaching of Sentence Structures
- 4. Comprehension and writing activities are also carried out for students who have developed good oracy skills.

DAS Specialised Educational Services Chinese Programme

Kong Yun Rui¹, Li Dong² & Cailyn Kwan²

- 1. Chinese Programme Manager and Lead Educational Therapist
- 2. Senior Educational Therapists and Chinese Teachers

Dyslexia Association of Singapore

INTRODUCTION

The programme was started in January 2013 for primary school students who have been diagnosed with dyslexia. The programme has been shaped to address the identified areas of weaknesses in the pilot study by providing students with strategies to help them learn Chinese. The aim of the programme is to help students become independent and inquisitive learners in the Chinese language. In 2017, we have also extended our support to lower secondary school students, helping them to cope with the demands of learning Chinese in school.

Each lesson covers common vocabulary, sentence structures and word recognition strategies. Students who have developed competency in their oral skills would then be introduced to writing and comprehension skills and strategies. The Orton-Gillingham approach and principles are adopted and applied in the delivery of lessons. Learning is pegged at the learner's level of learning to help develop feelings of competence and success.

PROGRAMME DESCRIPTION

Entry Criteria

Students who are in primary one to secondary two with a diagnosis of dyslexia.

A profiling test using the Chinese Literacy Assessment Tool will be conducted to ascertain their language proficiency to determine the suitability of the programme for the student.

Who the Programme is for

Primary and lower secondary school students who struggle with the learning of Chinese, especially in the area of character recognition. Students who are exempted from learning Chinese in school are also welcome.

EVALUATION OF PROGRAMME FOR 2018

Total enrolment for the calendar year 2018	225
Primary School	207
Secondary	18
No. of students profiled	127
No. of Chinese dedicated educational therapists	8
No. of Chinese dual specialists	5
No. of students on bursaries	40

RESEARCH CONDUCTED

The progress of the students over the course of the year was monitored in three categories: primary school students receiving an hour of intervention, primary school students receiving two hours of intervention, and secondary school students who were also receiving two hours of intervention on a weekly basis.

The Chinese Literacy Assessment Tool is a non-standardised test piloted by Tan et al., (2018) which measures a student's literacy ability on the measures of orthographic awareness, character reading, word-forming, spelling, reading comprehension and copying. The character reading, word-forming and spelling test items from the Chinese Literacy Assessment Tool were found to be both reliable and valid and were used to track the students' progress in these three areas. The test was conducted in a timed setting. For the character reading test, students were asked to read the single character on the screen. They were then asked to form a word with the character, which gave the score for word-forming. For the spelling test, students listened to the word to be written and the context of it before writing it down. The word list for the secondary school student on all three tasks covered a larger range of high-frequency words.

Primary school students receiving an hour of intervention weekly

There were a total of 177 students on the programme and 107 students were monitored for their progress. They each received an average of 37.7 hours of intervention. To cater to developmental differences, the learners were grouped according to age for analysis, with students from Primary 1 to 3 as the lower primary group and students from Primary 4 to 6 as the upper primary group.

Lower Primary

For the lower primary group, there were 45 students (30 male, 15 female). The mean age of the participants at the time of post-test were 108.49 months and had undergone an average of 37.72 weeks of intervention. A paired-samples t-test was used to compare the means of the students at the start and end of the intervention. Scores were significantly higher for character recognition after intervention (M=26.38, SD=20.87) as compared to prior the intervention (M=17.31, SD=15.61), t(44)=5.85, p<.001.

Table 1: Descriptive Statistics and t-test results for lower primary character reading, word-forming, and spelling

	Pretest		Posttest		95% CI for Mean				
Outcome	М	SD	М	SD	n	Difference	r	t	df
Reading	17.31	15.61	26.38	20.87	45	5.94, 12.19	.88*	5.85*	44
Word Forming	16.69	15.38	26.27	20.98	45	6.67, 12.48	.90*	6.65*	44
Spelling	9.31	8.67	16.84	11.82	45	5.15, 9.92	.74*	6.36*	44

^{*} p < .001.

As displayed in Table 1, there are statistically significant differences, at the .001 significance level, in pre-test to post-test scores for character reading, word-forming and spelling. Results show that students were able to read more characters, form words and spell more characters after intervention.

Upper Primary

For the upper primary group, there were 62 students (43 male, 19 female). The mean age of the participants at the time of post-test were 131.85 months and had undergone an average of 37.70 weeks of intervention. A paired-samples t-test indicated that scores were significantly higher for character recognition after intervention (M= 41.21, SD =22.82) as compared to prior the intervention (M=35.35, SD =21.31), t(61) = 5.71, p < .001.

Table 2: Descriptive Statistics and t-test Results for upper primary character reading, word-forming, and spelling (1 hour)

	Pretest		Posttest		95% CI for Mean				
Outcome	М	SD	М	SD	n	Difference	r	t	df
Reading	35.35	21.31	41.21	22.82	62	3.80, 7.91	.94*	5.71*	61
Word Forming	34.19	20.45	40.48	22.27	62	4.22, 8.36	.93*	6.07*	61
Spelling	24.13	16.42	30.48	18.67	61	3.75, 8.94	.84*	4.88*	60

^{*} p < .001.

As displayed in Table 2, there are statistically significant differences, at the .001 significance level, in pre-test to post-test scores for character reading, word-forming and spelling. Results show that students were able to read more characters, form words and spell more characters after intervention.

Primary school students receiving two hours of intervention weekly

There were a total of 30 students on the programme and 25 students (14 male, 11 female) were monitored for their progress. They each received an average of 72 hours of intervention in a year. The mean age of the participants at the time of posttest was 134.86 months. A paired-samples t-test was used to compare the means of the students at the start and end of the intervention. Scores were significantly higher for character recognition after intervention (M=45.04, SD=23.12) as compared to prior the intervention (M=39.84, SD=23.27), t(24)=2.84, p<0.05.

Table 3: Descriptive Statistics and t-test results for upper primary character reading, word-forming, and spelling (2 hours)

	Pretest		Pos	Posttest		95% CI for Mean			
Outcome	М	SD	М	SD	n	Difference	r	t	df
Reading	39.84	23.27	45.04	23.12	25	1.42, 8.98	.92*	2.84*	24
Word Forming	39.08	23.06	44.24	23.73	25	1.87, 8.45	.94*	3.24*	24
Spelling	30.26	21.45	34.24	20.26	25	0.79, 6.97	.94*	2.59*	24

^{*} p < .05.

As displayed in Table 3, there are statistically significant differences, at the .05 significance level, in pretest to posttest scores for character reading, word-forming and spelling. Results show that students were able to read more characters, form words and spell more characters after intervention

Secondary school students receiving two hours of intervention weekly

There were a total of 18 students on the programme and 9 students (6 male, 3 female) were monitored for their progress. They each received an average of 72 hours of intervention in a year. The mean age of the participants at the time of posttest were 159.96 months. A paired-samples t-test was used to compare the means of the students at the start and end of intervention. Scores were significantly higher for character recognition after intervention (M=51.11, SD=14.5) as compared to prior the intervention (M=44.67, SD=17.75), t(8)=2.54, p<.05.

As displayed in Table 4, there are statistically significant differences in pre-test to post-test scores for character reading (p=0.035), word-forming (p = 0.005), spelling (p = 0.004) and writing (p = 0.000). Although there was an overall improvement in their reading comprehension scores, this improvement was not statistically significant (p = 0.063). Results show that students were able to read more characters, form words, spell more characters and read and write better after intervention. Due to the relatively small population of secondary school students, the effect size was also calculated for each of the measures for pre and post-test gains. There is a medium to large effect size found for all measures.

Table 4: Descriptive Statistics and t-test results for secondary school character reading, word-forming, spelling, reading comprehension and writing (2 hours)

	Pre	test	Pos	Posttest								
Outcome	М	SD	М	SD	n	Mean Difference	r	t	df	d		
Reading	44.67	17.75	51.11	14.50	9	0.60, 12.29	.91*	2.54*	8	0.85		
Word Forming	40.22	16.74	47.89	14.33	9	3.00, 12.33	.94*	3.79*	8	1.26		
Spelling	41.44	9.13	49.11	11.65	9	3.29, 12.05	.88*	4.03*	8	1.34		
Reading Compre- hension	3.44	2.07	4.89	1.47	9	-0.10, 2.99	.40	2.16	8	0.72		
Writing	10.11	2.09	13.78	2.17	9	2.45, 4.88	.72*	6.96*	8	2.32		

^{*} p < .05.

QUALITY ASSURANCE

To ensure that the programme is of high quality, annual audits of classroom teaching are conducted. An annual programme evaluation measuring the progress made by students is also carried out to ensure the effectiveness of the programme. Progress of students is also shared with parents bi-annually during the meet-the-parents session. Dr Tan Ah Hong, who is the consultant for our Chinese programme, helps oversee the quality assurance of the programme.

TEACHER TRAINING

All teachers have a Professional Certificate in Chinese Language Teaching and a Certificate in Supporting SpLD Learners in Advanced Chinese Literacy Skills offered by the DAS Academy. They also have Chinese proficiency of Hanyu Shuiping Kaoshi (an accredited Chinese proficiency test by Chinese Language Council International, China) Level 6. Dedicated teachers are required to complete a Diploma in Chinese language teaching. All teachers also have a postgraduate certificate in Special

Education Needs. In-house training and professional development are conducted internally and with Dr Tan Ah Hong, a former curriculum specialist with the Ministry of Education and current lecturer in the National Institute of Education. She has since conducted training for the team on curriculum development, improving teachers' competency, word recognition, reading comprehension and writing.

NEW INITIATIVES TAKEN FOR 2018

Initiative 1: Review of Curriculum for Intervention

Having provided intervention for learners in their learning of Chinese in the last five years, a review of the curriculum for intervention was necessary for us to continue to offer effective intervention to them. The review was carried out in consultation with our programme consultant and the whole team of educational therapists. The review will be completed in 2019. Following which, the development of resources will commence.

Initiative 2: Secondary School Bridging Programme

The curriculum has been reviewed to ensure its relevance and effectiveness in bridging the learning gap for secondary school students. The programme now serves a total of 28 secondary school students on a weekly basis. Their progress is monitored based on their character reading, word-forming, spelling, reading comprehension, writing and school results.

Initiative 3: Requests for support from China

There were opportunities for us to share our knowledge of dyslexia and Chinese language support in China. We presented at the Harbin International Educational Conference in October and again at the Shenzhen Children Hospital in December. Each of these sessions had a reach of more than 100 people in audience. At Harbin, the people in attendance were mainly local parents, preschool principals and officials from the local ministry of education while in Shenzhen, there was a mix of doctors, speech and language therapists and educators from all over China. Both presentations were well-received and the organisations requested for additional support in the year ahead.

ENGAGEMENT AND AWARENESS

We have been invited to share with Chinese teachers from Yumin Primary School, Junyuan Primary School, Sengkang Primary School and Bendemeer Primary School to help them better understand dyslexia and Chinese learning. More than 50 teachers have benefitted from the sharing. In addition, together with DAS Academy, we have also trained Chinese teachers from Lianhua Primary School and Pioneer Primary School to support their students who struggle in learning of Chinese.

There has also been a total of six open-house conducted for allied educators in both primary and secondary school at various learning centres across the island. In these open-houses, the allied educators gained insights on our pedagogy and teaching resources used in intervention.

To support parents whose children are transitioning to secondary school in 2019, we organised a session to help them better understand the pathway of Chinese learning and the various syllabus offered in secondary school. The session was concluded with a sharing of the Secondary School Bridging Programme which aims to help students bridge the learning gap between the primary and secondary school Chinese curriculum.

TESTIMONIALS

Constant update and feedback from his teacher were helpful and supportive of my child's learning. Teacher Felicia goes the extra mile to coach him when the Primary School Leaving Examination was near. I really appreciate her for doing that.

- Parent of Primary 6 student from Sengkang Learning Centre

The teacher is very dedicated and goes the extra mile to engage and support both the student and parent.

- Parent of Primary 6 student from Rex House Learning Centre

My child has shown interest in learning the language after attending the classes. The current learning pace is manageable for him as he takes a lot of effort and courage to speak and use the language. I am also glad that there is no homework given.

Parent of Primary 3 student from Tampines Learning Centre

I am happy with the progress I have seen. My child is very happy to attend the class. The small class size and close engagement have helped my child in his learning. The teacher really pays attention to individual needs and learning style and is very encouraging.

- Parent of Primary 5 student from Tampines Learning Centre

His ability to read and write is better compared to earlier this year. He also showed a more positive learning attitude.

- Parent of Primary 2 student from Queenstown Learning Centre

He has maintained his interest in the Chinese Language. The teacher is able to engage him and drive some learning that he can retain.

- Parent of Primary 4 student from Bishan Learning Centre

我的孩子能够认识的字增加了很多。'

"My child is able to recognise a lot more words in Chinese now."

- Parent of Primary 4 student from Queenstown Learning Centre

SUCCESS STORIES

Dan*, a primary two boy, was not able to recognise many high-frequency Chinese characters. He maintained his enthusiasm towards learning, participated actively in classroom discussion and was mindful to use only Chinese to speak. Now, he is able to speak fluently in Chinese and expresses himself coherently with the right sentence structures.

In a reading test he did at the start of the year, he could only recognise 27 out of 100 characters. During the course of the intervention, he learnt different word recognition strategies to help him learn how to read and write Chinese characters. By the end of the year, he could recognise 78 out of the 100 characters. Most importantly, he was able to apply the skills taught to help himself to recognise Chinese characters, which in turn has greatly helped him in his comprehension and writing skills.

At home, his mother has also found that Dan has become more independent when learning for his weekly Chinese spelling tests in school and could complete most of his homework on his own. He also scored the highest for Chinese in the class he was in.

ABOUT THE AUTHORS



KONG YUN RUI Chinese Programme Manager Lead Educational Therapist

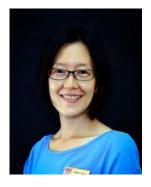
Kong Yun Rui has been with the DAS since 2012. She provides intervention for learners with dyslexia on the Chinese Programme. In addition, she is also an adjunct lecturer with the DAS Academy, training and equipping parents and educators to better support learners with specific learning differences. She is also responsible for the training of educational therapists in the provision of Chinese intervention. She was awarded the CEO Commendation Award in February 2017 for her contribution to knowledge in assessment of Chinese literacy. She is currently a Fellow with the Register of Educational Therapists (Asia).

Yun Rui has a strong interest in developing the whole child and in bilingualism. She actively looks into the development of educational therapists to provide a holistic learning environment for the child. She is also part of the Specific Learning Difficulties Committee at the DAS which looks at curriculum review to effectively support learners and the training and resources required to support professionals in their work with children with learning challenges.



LI DONGSenior Educational Therapist

Li Dong has been with the DAS for more than five years. He provides intervention for learners with dyslexia on the Chinese programme. In addition, he is also conducting the curriculum for both primary and secondary lessons and mentor other teachers to ensure the teaching qualifications. Currently he is leading to conduct the secondary school bridging programme to provide intervention to secondary school students. Li Dong has a strong interest in conducting the curriculum and lecturing the knowledge to educators.



CAILYN KWANSenior Educational Therapist

Cailyn has been with the DAS since 2014. She provides intervention for learners with dyslexia on the Chinese programme. In addition, her scope of work includes research in the area of learning difficulties in Chinese, profiling, curriculum development and teacher mentoring. Cailyn has a strong interest in developing the curriculum and resources that can be used by our Chinese therapists so that the team is able to deliver effective intervention to our students.



Specialised
Educational
Services
UNLOCKING POTENTIAL

retailed Educational Services (\$55) is a vision of Drumou Association of Security

OUR AIM

OUR APPROACH

The programme helps to foster

student's interest in the language

through thematic-based teaching.

Lessons are also structured in a way

to increase efficiency in learning the

language through the instruction of

pattern, word recognition strategies

character structure, radicals, stroke

and understanding how words are

combined together.

In this way, vocabulary covered is relatable and can be used on a daily basis, allowing them to express themselves better in the language.

Students are taught interactively with the use of stories, educational games and hands-on activities to make language learning a fun and memorable experience for them. This helps to minimise their stigma towards the Chinese language and build up their confidence and motivation to learn the language.

The aim of the Chinese Programme is to help students with dyslexia become independent, inquisitive learners in the Chinese language. Chinese as a language is more complex as compared to English. In Chinese, many words can be read the same way and each word has a different meaning. There are also many strokes involved in writing Chinese words and a child with sequencing difficulties will find it even harder to do so. A good understanding of part-whole relationship is also required in writing the characters as the proportion of the parts to make the word is vital. Due to the complexity of the language, it poses itself as a difficulty for the child to recognise how to read and write in Chinese.

COMPONENTS COVERED IN A TYPICAL LESSON: · Word Recognition · Vocabulary Instruction Teaching of Sentence Structures Comprehension and writing activities are also carried out for students who have good oracy skills in the language. RECOMMENDED FOR The application is open only to primary school students with the diagnosis of dyslexia. Priority will be given to students who are not exempted from Chinese.

For more info, visit www.das.org.sg

Specialised Educational Services

UNLOCKING POTENTIAL

MATHS PROGRAMME

OUR APPROACH

The aim of the SES Maths Programme is to effectively support students with dyslexia who have persistent difficulties in mathematics, particularly with maths word problems.

The programme helps to bridge the gap between your child's ability and the mainstream syllabus by addressing areas they are weaker in. This is done through a C-R-A (Concrete-Representational-Abstract) approach. Every stage of learning ensures that the child links mathematical ideas in a progressive and cumulative way. The methodology applied constantly keeps in touch with the mainstream school maths syllabus, with the aim of bridging the gap between the student's ability and mainstream syllabus.

RFCOMMENDED FOR

Students with dyslexia have specific areas of difficulty that can affect their mathematical performance such as poor short term and working memory, reversals in words and numbers, problem with sequencing and difficulty with reading word problems. These difficulties can impede a child's ability to understand concepts, do calculations and apply to what they have learnt to forward and backward, understanding of number relationships, place value, timetable facts and following multi-step calculations.

DAS Specialised Educational Services Maths Programme

Rebecca Yeo¹, Aishah Abdullah (Albel)², Siti Aishah Bte Shukri³ and Serene Low⁴

- 1. *Maths Programme Manager*
- 2. Lead Educational Therapist
- 3. Senior Educational Therapist
- 4. Educational Therapist

Dyslexia Association of Singapore

The SES Maths Programme seeks to identify the difficulties students with dyslexia have with the understanding of Math concepts, the language of Maths and proficiency in Mathematical skills and to address these difficulties through dyslexia-friendly Maths remediation. The Maths programme has two curricula to meet the diverse learning abilities of our students: the Essential Maths curriculum and Problem Sums for Upper Primary Curriculum.

The Essential Maths curriculum aims to build students' understanding of the essential concepts and topics covered in the mainstream syllabus. This is achieved through the C-R-A (Concrete-Representational-Abstract) approach, which provides students with an opportunity to visualise the concept through interaction with real objects and make links between pictorial representations and mathematical equations. Students are also exposed to a structured sequence to approach word problems via the Polya's Four-step process approach (1945): Understand the problem, Plan a strategy, Solve the sum and Check the working. Every stage of learning ensures that the child links mathematical ideas in a progressive and cumulative way.

The Problem Sums for Upper Primary curriculum is offered to students taking Standard Mathematics at Primary 5 and Primary 6. This curriculum aims to strengthen students' problem-solving and mathematical communication skills by encouraging students to share their thinking process in solving a problem before the teacher demonstrates how to break down higher-order word problems and solves them using the Polya's Four-step process approach. Heuristics are introduced explicitly, with guidance on their function, how to use them and when it is appropriate to use them.

ENTRY CRITERIA

The programme accepts primary school students with a valid diagnosis of dyslexia, satisfying the criteria below:

P1-4	scoring below 50%	
P5 & P6 Foundation	regardless of score	
P5 & P6 Standard	scoring below 75%	

All students exit the programme at the end of Primary 6.

WHO THE PROGRAMME IS FOR

This programme is intended for students with dyslexia who are performing below what is expected at the school level. These students display persistent difficulties with remembering mathematical facts and procedures (e.g. times tables, long division), number sense (e.g. comparing and ordering numbers, rounding off), understanding of maths concepts, accurate or fluent calculation and understanding the language of word problems.

EVALUATION OF PROGRAMME FOR 2018

Total enrolment for 2018	326
No. of students graduated	57
No. of teachers/therapists	33
Bursaries provided for beneficiaries	178

QUALITY ASSURANCE

Classroom observations for all Maths educational therapists are conducted once every financial year to ensure that our teachers uphold the standards of quality mathematics teaching set out by the organization. All Math educational therapists are evaluated on their lesson planning, lesson execution, communication, and classroom management. Observations were conducted by the core team members either through in-class or video observations of their lessons.

A total of 27 Math educational therapists were assessed for quality assurance in classroom teaching practices in 2018-2019. All of them passed their QA observations. Newly trained Maths dual specialist therapists were exempted from this exercise as they had just completed their initial teacher training in the same year.

TEACHER TRAINING

A group of 10 educational therapists were trained as Maths dual specialists in 2018. This batch consists of 9 full-time educational therapists and 1 educational therapist on the flexi-scheme.

Our educational therapists on the flexi-scheme are individuals who are not full-time staff. They have experience in teaching Mathematics, but may not have prior experience teaching children with dyslexia. To ensure that these teachers understand the needs of our students with dyslexia, they are required to attend a 15-hour Certificate in Dyslexia Studies course conducted by the DAS Academy. This course aims to introduce participants to the nature of dyslexia, how it is assessed and how learners with dyslexia can be supported on the DAS programme, in school and at home.

In addition, all Math educational therapists will have to attend a 15-hour Certificate in Dyscalculia and Numeracy Teaching course with the DAS Academy. This is followed by a Professional Certificate Course jointly conducted by DAS Academy and the Maths Core Team. This course includes four lecture sessions, covering how dyslexia affects mathematics learning, the key approaches of DAS Maths, lesson planning for students with mathematical difficulties, using concrete manipulatives in mathematics teaching, as well as key concepts and vocabulary in the teaching of Whole Numbers. Participants are also required to complete a 5-week practicum on a class of students, which includes 1 week of full observation, 2 weeks of co-teaching and 2 weeks of teaching practice for the full lesson. Teachers are evaluated on their lesson planning, lesson execution, communication, and classroom management.

Upon the completion of the certificate courses and practicum, the educational therapists are ready to take on their own classes at the learning centres. They will continue to receive support in the form of focus group sessions, conducted within the first term after their completion of the initial teacher training. This is to equip our teachers in the area of classroom differentiation, management of students with severe comorbidities, and parent-teacher communication.

DESCRIPTION OF INITIATIVES TAKEN FOR 2018

Initiative 1: Focus group sessions for beginning teachers.

Beginning teachers who have obtained their Professional Certificate Course (PCC) in Maths are expected to teach Maths classes by the next school term. To better support our teachers in their new endeavour, two focus group sessions have been initiated. These focus group sessions sought to instil greater confidence in the teachers by providing them with a platform to share their difficulties and glean effective teaching practices from the Maths core team members.

Based on the initial feedback from these teachers, the second session was tailored to cater to their needs in greater depth. Teachers were facilitated through group work, presentations and demonstrations to deepen their understanding of the use of concrete manipulatives as well as the implementation of C-R-A in lessons.

Initiative 2: School-Based Remediation (SBR) projects.

This year, the Maths team also provided intervention services for two external organisations: Northlight School and Singapore Boys Home. The objective of the SBR projects is to create avenues to provide Maths intervention for students with dyslexia outside of DAS. As each organisation may have its own objectives of what they would like DAS to achieve with their students, the creation of each SBR project had to go through an Assessment-Planning-Implementation-Evaluation (APIE) cycle.

In the assessment phase, representatives from the prospective organization will meet together with DAS Maths Programme Manager Ms Rebecca Yeo and SBR project coordinator Ms Anaberta Oehlers to discuss the needs of the school, gain a better understanding of the student profile and decide on what the DAS Maths programme can offer. A DAS representative will also visit the organization to get a better understanding of the students' natural learning environment and their ability level.

The prospective organization will provide DAS with the names of the students we will be working with and their learning profiles. This is to help us draw up a programme plan that will help meet the needs of the school. Once the programme plan has been vetted and agreed upon by the representatives of the organization, DAS will deploy an experienced DAS Maths educational therapist to conduct the intervention with the students.

School-based projects operate in 1-hour sessions, conducted weekly over a period of 20 to 40 weeks, based on our agreement with the school. The therapist will see a

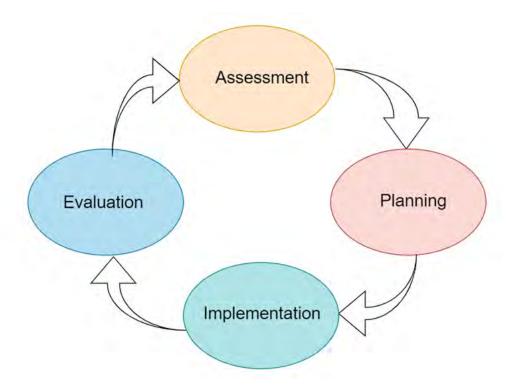


Figure 1. The APIE cycle.

class of up to 5 students each session. The full duration of the programme will include a diagnostic test conducted before the intervention and an assessment for learning at the end of the programme. The results of the test will be analysed and feedback will be gathered from our therapist, the school representatives and/or the students.

Initiative 2a: Northlight School SBR project

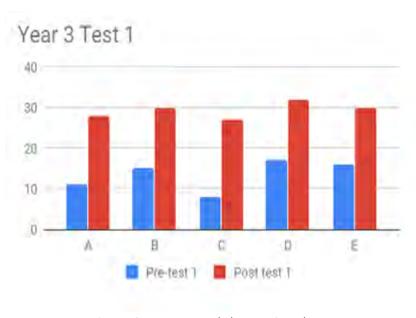
At Northlight School, our Lead Educational Therapist, Ms Aishah Abdullah provided 3 terms of Maths intervention for a group of four Year 1 students and 4 terms of intervention for a group of four Year 3 students. These students were identified by their school teachers to have a diagnosis of dyslexia, school attendance of at least 70% and at least a D grade in their school Math exams yet displaying difficulties with basic multiplication, division and word problems.

The topics that were covered with the students are listed in table 1.

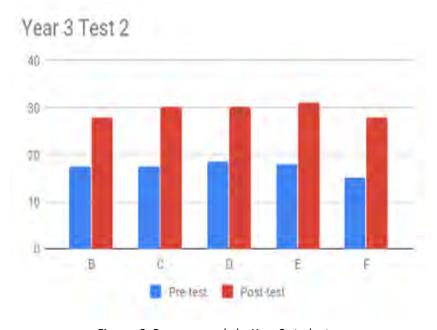
TABLE 1: TOPICS TAUGHT

YEAR 3 STUDENTS YEAR 1 STUDENTS **SEMESTER 1** Place value of up to 4-digit numbers Place value of up to 4-digit numbers Comparing and ordering numbers Comparing and ordering numbers Number patterns Number patterns Odd and even numbers Odd and even numbers Number bonds Number bonds Addition & Subtraction of Whole Addition & Subtraction of Whole **Numbers Numbers** ♦ Up to 2-step word problems ♦ Up to 2-step word problems involving involving addition and subtraction. addition and subtraction. ♦ Concept of multiplication as repeated addition ♦ Times tables (2 to 10) Multiplication by tens 2-digit by 1-digit multiplication Up to 2-step word problems involving addition/subtraction and multiplication. **SEMESTER 2** ♦ Concept of multiplication as Money concepts repeated addition 4 operations involving money ♦ Times tables (2 to 10) Multiplication by tens ♦ 2-digit by 1-digit multiplication ♦ Up to 2-step word problems involving addition/subtraction and multiplication. ♦ Counting money • Reading and writing money in decimal notation ♦ Converting money in decimal notation to cents only and vice versa ♦ Addition, Subtraction and Multiplication of money ♦ Up to 2-step word problems involving money ♦ Length

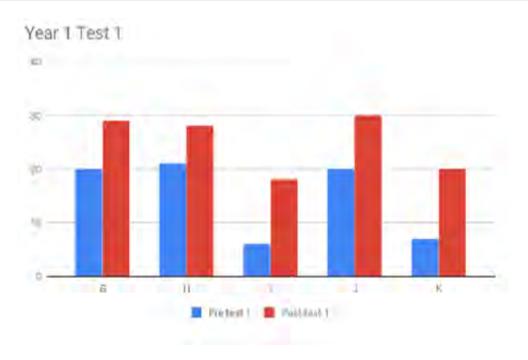
The students were tested at the start of the semester, and again at the end of the semester. Even though there was attrition due to poor school attendance, the results showed that all students who attended at least 18 weeks of intervention made significant progress (refer to Figures 2 to 5).



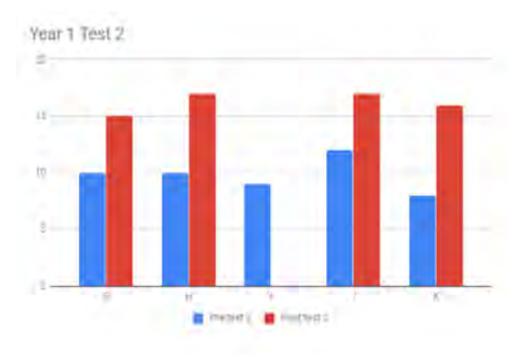
Figures 2. Progress made by Year 3 students.



Figures 3. Progress made by Year 3 students.



Figures 4. Progress made by Year 1 students.



Figures 5. Progress made by Year 1 students.

As part of the evaluation process, we also gathered feedback from the school representative, Ms Jaslyn. In her feedback, Ms Jaslyn noted that the students' confidence towards Mathematics had grown and improvement was reflected in the areas which we had worked on together with the students. However, she also acknowledged that there are administrative factors that made it challenging for us to conduct the intervention within the school setting during school hours. The recommendation made moving forward would be to direct these students to the DAS learning centres for Maths intervention.

Initiative 2b: Singapore Boys Home SBR project.

The Singapore Boys Home project was our first time providing Maths intervention in a non-school-based setting. Our Lead Educational Therapist, Mr Roslan Saad provided two terms of Maths intervention to a group of 5 boys. These boys were between the ages of 15 and 17; they displayed low confidence in Mathematics, short attention span and difficulties in basic number sense involving whole numbers and operations of whole numbers.

In addition, the boys also had other issues that interfered with their learning. Two of the boys were diagnosed to have dyslexia, while one other was observed to have poor language skills. Yet another boy had not attended school in years and the last one has a history of multiple behavioural issues which disrupt learning.

In spite of all these challenges, these boys were selected to be on the SBR project because they had shown a generally positive attitude towards the in-house education programme, which included English and Mathematics classes.

The Singapore Boys Home had engaged the DAS so that we could help to support the boys further with their learning needs in literacy and mathematics. We also learned that two of the boys were from Northlight School and two others were from Assumption Pathway School. This helped with the development of the programme plan as it meant that we could tap on our experience from the Northlight School SBR project.

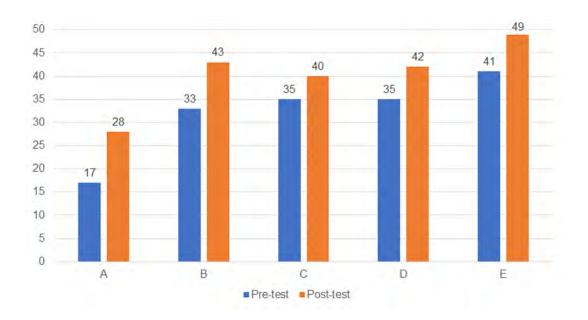
The topics covered with the students is in table 2.

Although the programme was planned for 20 weeks, the students only attended 16 weeks of lessons due to several unforeseen circumstances. Nevertheless, the table below shows that the boys made good progress over a period of 16 weeks.

TABLE 2: TOPICS TAUGHT

1ST TERM (10 HOURS)	2ND TERM (10 HOURS)
 Place value of up to 4-digit numbers Language of place value: digit, place, value, stands for Comparing and ordering numbers Math language: ascending order, descending order Number patterns Odd and even numbers Addition & Subtraction of Whole Numbers Language of addition: sum, plus, add Language of subtraction: take away, minus Language of comparison: more than, less than, greater than, difference Drawing bar models: Part whole Additive comparison Up to 2-step word problems involving addition and subtraction. 	 Concept of multiplication as repeated addition Language of multiplication: groups, each, Times table tricks (3, 4, 6, 7, 9) Up to 4-digit by 1-digit multiplication Up to 3-digit by 2-digit multiplication Concept of division as sharing equally Language of division: divide, share equally, pack equally, equal groups Writing a division equation Concept of division as making equal sub-groups Language of division: groups of, twos, threes, fours, tens. 1-step word problems involving division Up to 3-digit by 1-digit division Up to 2-step word problems involving addition/subtraction and multiplication.

As part of the evaluation process, we gathered feedback from both the boys and the school representative, Ms Siew Ping. The feedback given showed us that the boys enjoyed learning from Mr Roslan and that they appreciated the care, concern and patience that Mr Roslan had given them during the intervention. They have also grown in their confidence towards Mathematics and have shown improvements in the areas that we have worked with. Singapore Boys Home is very satisfied with the service provided by DAS and would like us to continue working with them next year.



Initiative 3: Enhancement of the Problem Sums for Upper Primary (PSUP)
Curriculum

The Problem Sums for Upper Primary (PSUP) curriculum aims to support students with the necessary strategies and thinking skills required to solve word problems within the Primary 5 and 6 Standard syllabus. Unlike the Essential Maths curriculum, the PSUP curriculum aims to complete covering specific concepts within a given duration of time.

The PSUP curriculum was launched since 2016 but student enrolment has been low. Some teachers are not confident to teach such classes due to the complexity of the word problems, their lack of experience with heuristics and the lack of clarity in how to teach them to students with dyslexia.

In 2018, we embarked on a curriculum review to enhance the scope of the curriculum and improve the quality of the teaching materials. We engaged Dr Lee Ngan Hoe, an Associate Professor from the Mathematics and Mathematics Education department of the National Institute of Education, Singapore to be our external consultant on this review.

One of the curriculum materials of the PSUP curriculum is the Scope & Sequence document which provides teachers with the sequence of the content to teach.

Previously, teachers found that it was hard to approach the teaching of word problems as one heuristic could be applied to various topics in the Maths syllabus and sometimes there are multiple methods to solve a particular question type. To resolve this issue, we studied the sequence of topics in the My Pals Are Here P5 and P6 textbooks carefully and identified common problem types that students find challenging from these topics. Then, we organised all these problem types in a structured, sequential and cumulative manner based on the prerequisite knowledge required to solve the problems. This allows teachers to have a bird's eye view of the various question types, observe how specific question types overlap in certain topics and help learners apply the knowledge learned to solve the word problems.

To address the difficulties our teachers face with regards to their lack of confidence in teaching heuristics and challenging word problems, we made changes to the teaching approach documents for each problem type. The teaching approach is an internal document that teachers can refer to for guidance on how to teach a specific word problem. Previously, we provided teachers with two broad frameworks: the Polya's four-step problem-solving process and the Try-Share-Learn-Apply approach. In this review, we further enhanced the approaches by providing specific steps on how teachers should implement this within the classroom.

We highlighted the key features of each problem type in the teaching approaches so that teachers know how to scaffold the problem and where to direct their students' attention to. This is accompanied by a suggested heuristic that could be used to solve the problem, along with instructions on how to use and teach the heuristic. We hope that all these changes will help to create greater clarity for our teachers to understand these tools (i.e. their procedures and function) and how they can be used in varying problem types.

Given that a problem may have multiple solutions to arrive at the same answer, students are encouraged to share their approaches to solving the problem before the teacher demonstrates the use of a specific heuristic. This is to encourage accurate mathematical communication and to pick up similarities in their strategies, which are essential to arriving at the final answer. We also included some guiding questions in the student worksheets, so as to promote students' metacognitive skills and reduce their reliance on the teachers when they face difficulty or when they are not confident of their solution.

The review of the PSUP curriculum is scheduled to be completed by the end of 2020. The next phase will be to train teachers in understanding and the application of the

different problem types and heuristics. This will be accompanied by classroom observations and mentoring to ensure that teachers are able to execute the lessons confidently. Finally, we will conduct another survey to collect teachers' feedback about the training and whether the support provided has been effective in boosting their confidence to teach PSUP classes.

RESEARCH CONDUCTED

"The C-R-A approach and its influence on the acquisition and retention of whole number knowledge on Primary 4 learners with dyslexia"

Follow-Up research was conducted to investigate the effectiveness of the mathematics remediation on 45 Primary 4 students in the DAS Essential Maths Programme with a comparison of 21 control group participants who are not in our maths programme but are attending the MOE-Aided Literacy Programme. The control group participants were selected based on a profile similar to our experimental group - learners with dyslexia who struggle in maths.

A pre-test was conducted in Term 1 2018 and the first post-test was administered after 6 weeks of intervention. The DAS maths students then continued receiving maths intervention from DAS, on top of their learning in schools, for another 7 weeks before they sat for another post-test at the end of Term 2. All of the classes were taught using the same programme plan to ensure that all the topics taught were standardized across all classes. On the other hand, the participants from the control group sat for the same tests with knowledge acquired from their learning in school and any other remediation they may receive outside of DAS.

This research aims to investigate the impact of employing the C-R-A instruction on students' acquisition and retention of whole number knowledge over a 13-week intervention. The students' performance on the pre and post-tests, relative to the results of control group, will help to determine the effectiveness of using C-R-A approach on learning of whole numbers. It will also inform how well the experimental group is able to retain the knowledge after a delayed interval (Post-test 2) versus immediate recall of knowledge (Post-test 1).

Data has been collected and is in the process of further analysis. Conclusions will be included in the upcoming journal entry.

ENGAGEMENT AND AWARENESS

No. of school talks in 2018	5
No. of parent talks in 2018	5
No. of articles written in FACETS/DAS blog	2

Other events to create engagement and awareness of the programme:

- 1 Workshop at Unite SpLD Conference (pre-conference)
- 3 DAS Open houses for AEDs and school teachers
- ♦ 2 MOE teacher attachments
- ♦ 1 Sharing session with representatives from Shenzhen Children's Hospital
- ♦ 1 Sharing session with MOE representatives

TESTIMONIAL

"Hi, Teacher Rebecca,
She (Farhana) has improved in her maths, thanks to you.
I hope Farhana has shown you her Math prelim papers.
I just wanted to share with you that her Maths teacher in school also agrees that she has made a big improvement.
Thanks, teacher."

Parent of Farhana d/o Thamimul Ansari Student of Rebecca Yeo, Lead Educational Therapist Chua Chu Kang Learning Centre Bernice Yeo - P6 Fdn 2018 student

SUCCESS STORY

Bernice began DAS intervention Maths classes at the start of 2018. At first, Bernice was rather quiet and had difficulty working out sums that required multi-step operations. She was not confident to ask for help when faced with questions she could not fully comprehend. However, her strength in Maths was in writing out her workings neatly and systematically.

Upon realising her situation, she was introduced to:

- the Maths rules of working out sums on all topics learned in school eg. order of operations, finding the area and perimeter of triangles, rectangles and composite figures.
- sentence comprehension annotation strategies to fully comprehend all genre of sums presented to her.
- retelling the sums in her own words
- a structure for documenting her workings.

Bernice was diligent in applying all the strategies taught to her. Eventually, her confidence in Maths began to grow. She started taking the initiative to demonstrate her solutions on the whiteboard and explain her workings. Armed with this new found confidence in Maths, Bernice began tackling more challenging word problems and started to seek assistance when in doubt on specific areas involved in the sums.



In subsequent sessions, Bernice was able to independently work on all genre of sums systematically. She was more cheerful and chatty. She even began to openly share about her problems with the other subjects in school and clearly expressed that her favourite subject was Maths.

As the prelim exams and PSLE drew closer, Bernice put in greater discipline on herself by working on practice papers under exam type timings. Her hard work paid off when she scored a Band 1 at PSLE 2018 Foundation Maths. Well done, Bernice! She is now taking Sec 1 NA Mathematics this year in Sec 1.

Written by Ms Aishah Abdullah, Lead Educational Therapist Bishan Learning Centre

ABOUT THE AUTHOR



REBECCA YEO *Maths Programme Manager and Lead Educational Therapist*

Rebecca has been with the DAS since 2011. She provides intervention for learners with dyslexia on the DAS Maths programme. In addition, she also oversees different aspects of the Maths programme at the DAS, such as developing the curriculum and resources, conducting teacher training, providing support to Math teachers, and raising awareness about dyslexia and mathematical difficulties to parents and schools.

Rebecca has a strong interest in specific learning difficulties such as dyslexia, dyscalculia and ADHD, and how they impact the learning of Mathematics. She enjoys teaching her students and seeing them grow in their confidence in themselves and in their mathematical abilities. This, together with her passion in SpLD, pushes her to continue developing best practices to teach heuristics and problem-solving skills to students with dyslexia and mathematical difficulties. She also contributes to the team by developing strategies for a problem sums curriculum targeted for students with dyslexia who are coping well with the concepts taught at the P5 and P6 Standard level, but show difficulty understanding and applying their knowledge to solve higher -order word problems.



AISHAH ABDULLAH (ALBEL)

Lead Educational Therapist

Mdm Aishah has been with the DAS since 2007 and is one of the pioneer members of the Maths core team. She provides Mathematics intervention for learners with dyslexia on the SES Mathematics programme. Mdm Aishah strongly believes that students learn mathematics concepts readily when Mathematics is made meaningful and fun for them.

Aside from her teaching responsibilities, Mdm Aishah has experience conducting talks and workshops to parents and students. She also plays a key role in coordinating and facilitating teacher training for new Maths teachers. Mdm Aishah has years of experience with curriculum planning under her belt. She currently contributes to the Problem Sums for Upper Primary Mathematics Curriculum by creating some of its teaching approaches and lesson materials.



SITI AISHAH BTE SHRUKI Senior Educational Therapist

Siti Aishah has been with the DAS since 2010. She provides small group intervention for learners with dyslexia on the MAP Literacy and DAS Maths programme. In addition, she is part of the maths core team which develops the curriculum and provides teacher training and support to the Math teachers. She has also conducted talks and workshops for students, parents and educators, locally and internationally.

Siti Aishah has a deep interest in specific learning difficulties such as dyslexia and impairment in mathematics. She aims to instill love of learning in spite of the challenges these children face. The first hurdle to learning is usually lack of motivation and confidence. She is passionate about reaching out to children through ways that they learn best. Her works include research on the Maths programme in DAS as well as mathematical comprehension and problem-solving skills.



SERENE LOW *Educational Therapist*

Serene has been with the DAS since 2015. She provides intervention for learners with dyslexia on the Main Literacy and DAS Maths programmes. In addition, Serene oversees curriculum planning and generation of teaching approaches and worksheets for the Maths programme at DAS. She is also involved in profiling new Maths application and providing support for the Maths teachers.

Serene has a strong interest in in exploring how the classroom can be adapted to maximize learning for students with other developmental or physical differences (i.e. autism or hard-of-hearing) on top of specific learning difficulties such as dyslexia. She believes that a strong teacher-student relationship is critical in the process of intervention. To her, the teachingjourney is most fulfilling when students develop greater self-confidence beyond progress in their academic performance.

Specialised Educational Services

UNLOCKING POTENTIAL

PREP 2 PSLE (FORMERLY KNOWN AS ENGLISH EXAM SKILLS)

The aim of the programme is to provide students with direct support to better equip them with the knowledge, skills, strategies and attitudes to cope with the demands of the English language syllabus in school.

OUR APPROACH

The SES PREP 2 PSLE provides an extension to what students have been taught in the Main Literacy Programme (MLP) and helps to put the skills learnt into practical use in their examinations. In class, students will be exposed to various language related knowledge and strategies to determine their needs in learning the language. Skills covered in a lesson will be reinforced in subsequent lessons to ensure reinforcement of concepts taught.

Components covered in the programme include:

- 1. Grammar
- 2. Comprehension
- 3. Editing
- 4. Synthesis & Transformation
- 5. Annotation Skills

The curriculum has been carefully designed and frequently evaluated by our team to ensure its suitability to our students. Lessons are in line with the MOE English Language Syllabus, and reference the Orton-Gillingham principles.

DAS Specialised Educational Services PREP 2 PSLE (Formerly known as English Exam Skills Programme)

Tuty Elfira Abdul Razak¹, Siti Asjamiah³, Andy Wang²

- 1. PREP 2 PSLE Programme Manager
- 2. Lead Educational Therapist
- 3. Senior Educational Therapist

Dyslexia Association of Singapore

1. INTRODUCTION

Previously known as the English Exam Skills, the programme has since been renamed to 'PREP 2 PSLE' (Preparation for English Paper 2 PSLE), offering a revitalised and up-to-date set of curriculum with the aim of supporting primary school students with dyslexia in their English subject of the Primary School Leaving Examinations (PSLE).

Prior to the launch of PREP 2 PSLE in 2013, the team of curriculum developers observed and analysed past years' English examination papers and evaluated the learning needs that our primary school students require support with. The team believes that students with dyslexia can acquire skills and strategies to cope with various challenging components found in English Paper 2. Thus, a set of the curriculum has been meticulously and uniquely designed and developed to address the challenges experienced by students in Grammar, Editing, Synthesis and Transformation and Comprehension components of the English PSLE paper.

However, the PREP 2 PSLE team discovered that our students' needs extend beyond the above-mentioned components. Hence, over the past two years, the team has further developed and successfully launched the Oral English Exam Skills, Comprehension Cloze and Pre-Secondary bridging programme in the form of Short Term Programmes (STPs) which are delivered in blocks of 10 hours each. The objective of the curriculum is to provide students with direct support to equip them with the knowledge, skills, strategies and attitudes to cope with the demands of the English language syllabus in school.

PREP 2 PSLE lessons are conducted in multisensory, structured, progressive and emotionally sound ways. The PREP 2 PSLE team also came up with our own instructional approach: RIMAIR (Review, Introduce, Model, Apply, Independent (application), Recap). At the start of each lesson, previously learnt concepts are constantly reviewed and new concepts are then introduced systematically and progressively. Within each lesson, students are expected to gradually move towards an independent application of skills through attempting PSLE format question types.

2. PROGRAMME DESCRIPTION

Application for PREP 2 PSLE programme is open only to students who are diagnosed with dyslexia, are between Primary 3 to 6, and have attained a minimum overall score of 35% in their most recent school English Exam Paper. This is to ensure students have a reasonable level of reading fluency so that emphasis can be placed on the acquisition of new skills and strategies applicable to the English examination and not on decoding words.

The programme has recently extended its reach to non-DAS students who are in the School-based Dyslexia Remediation Programme (SDR) and meet the abovementioned criteria. Students attending the SDR programme are eligible to enrol for PREP 2 PSLE as long as a copy of the child's psychological report (dyslexia diagnosis) and/or the SDR enrolment letter (Summary of Assessment) is provided upon application.

Students who meet the above-mentioned criteria will be placed on the programme only at the beginning of every term. Attaining the basic skills and concepts taught at the start of the term ensures that students are able to acquire the cumulative set of skills as they progress through the term.

PREP 2 PSLE programme is specially designed to support Primary school students from Primary 3 to 6. There are three different categories of classes students will be placed in the Primary 3 and 4 stream, the Primary 5 and 6 Foundation stream, and the Primary 5 and 6 Standard stream. Each stream has its own unique set of curriculum and level of difficulty tailored to suit the learning needs of its students. Students eligible for the programme may join at the beginning of any term of the year.

P6 students who are currently in the PREP 2 PSLE programme will then advance to the English Pre-Secondary Bridging programme in Term 4 where they will have opportunities to consolidate their learning in the first few weeks before sitting for the PSLE. After the completion of their PSLE English paper, they will then embark on learning of some of the basic skills and components of the Secondary School English

curriculum that include Active Listening and Note-Taking Skills, Visual Text Comprehension and Grammar Editing. These students formally exit the programme at the end of Term 4.

Distribution of components (Grammar, Synthesis and Transformation, Editing, and Comprehension) covered in each stream can be found in Table 1. The Primary 3 and 4 stream focuses on building up the language foundations of the student, with an emphasis on attaining basic grammatical concepts and establishing simple skills in understanding reading comprehension passages. The Standard and Foundation streams focus on topics, skills and answering techniques that resemble the PSLE examination format.

Table 1. The streams and distribution of topics across streams and levels.

P3 AND P4	FOUNDATION	STANDARD	PRE-SECONDARY BRIDGING
- Grammar - Editing - Comprehension	- Synthesis and Transformation - Editing - Comprehension	- Synthesis and Transformation - Editing - Comprehension	 - Active Listening & Note–taking - Visual Text Comprehension - Grammar Editing

3. EVALUATION OF PROGRAMME FOR 2018

In 2018, we supported an average of 112 students per term. Of these, 25% comprised of Primary 3 and 4 (P3/4) students, 64% of them are in Primary 5 and 6 Standard streams (P5/6 STD) and the remaining 9% are in the Primary 5 and 6 Foundation stream (P5/6 FDN).

	TERM 1	TERM 2	TERM 3	TERM 4
Total student enrolment	104	114	126	103
No. of P3/4 students	24	26	30	31
No. of P5/6 Standard students	69	74	84	68
No. of P5/6 Foundation students	11	14	12	4

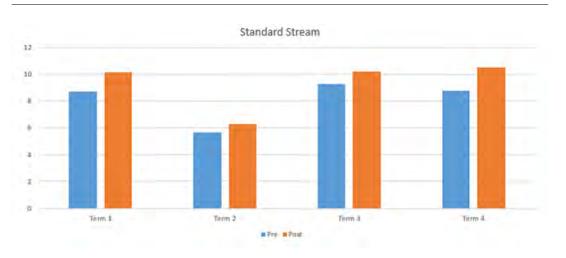
Our student enrolment peaked in Term 3, the majority of which comprised of P5 and P6 students in the Standard and Foundation streams. Out of the 96 students in P5 and P6, 52 of them sat for their PSLE at the end of Term 3. Out of these 52 students, 34 of them stayed on to continue with the Pre-Secondary Bridging Programme for an additional term. Student enrolment dipped slightly in Term 4 with the exit of the remaining P6 students who had opted out of the Pre-Secondary Bridging Programme.

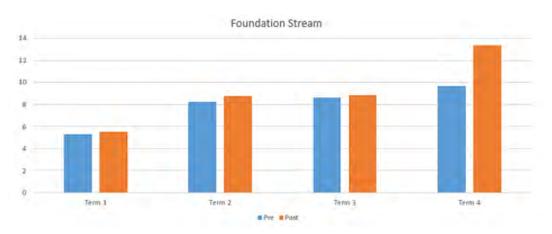
As part of our continued efforts to monitor the progress of our students, termly evaluation is carried out for all students in the form of pre- and post-tests administered using Ipads before the first and after the last lesson of each term respectively. These results were tabulated according to level and stream. The pre- and post-tests consisted of 15 multiple-choice questions (MCQ) that students must attempt within 15-20 minutes. For the P3/4 students, the 15 questions comprised of 5 questions each of Grammar, Editing and Reading Comprehension topics and skills taught during the term. For the P5/6 Std and Fdn students, the 15 questions comprised of 5 questions each of Synthesis & Transformation, Editing and Reading Comprehension topics and skills taught during the term.

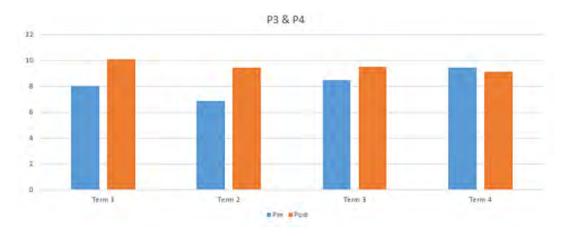
Results obtained on a termly basis demonstrated improvements in students' awareness and application of concepts taught throughout the term across most components, with more students getting more correct answers in the 15 MCQs of each of the termly Post-Ipad tests. The only exception was in the P3/4 students' performance in the Term 4 Post-Ipad test where a slight dip was recorded. It was noted that the dip was attributed to poorer performance in the Grammar component. A possible explanation for this was the exceptionally challenging topic being taught during the term i.e. the application of Present and Past Perfect Tenses where students experienced difficulties retaining and applying the aspects accurately in questions.

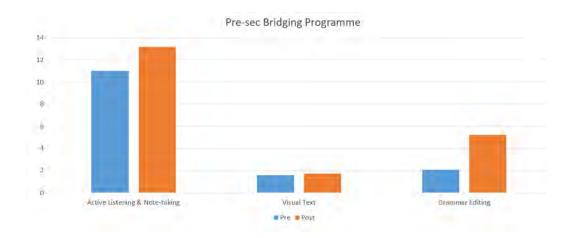
To evaluate students' performance over an extended duration of more than 10 weeks, new students enrolled in the programme as of 2017 were required to take a written entry test prior to joining their first lesson. An equivalent exit test is administered when students leave the programme at the end of term 4 for Primary 4 students and at the end of term 3 for Primary 5 and 6 students.

The Pre-secondary Bridging Programme was launched in term 4 of 2018. Students who attended the Pre-secondary Bridging Programme sat for a written Pre- and Posttest administered before the start of the first lesson and at the end of the last lesson. In addition, students' feedback was also obtained where they were required to provide their response regarding components of the programme they find most enjoyable learning and would be useful for their transition to secondary school.









Results from the Pre- and Post- tests demonstrated encouragingly positive results in awareness and knowledge of concepts related to Visual Text Comprehension and Grammar Editing, as well as skill acquisition and application in Active Listening and Note-taking.

4. RESEARCH CONDUCTED

There were two studies conducted in 2018. The first study evaluates the testing procedures of the English Exam Skills Programme (EESP), now known as Prep 2 PSLE, to ensure that questions used for assessments are reliable and valid. The second study explores the effectiveness of the programme on struggling learners without a dyslexia diagnosis.

The construction and evaluation of an English skills test for elementary school children with dyslexia.

In collaboration with Professor Hu Guangwei from Hong Kong Polytechnic University, a study was conducted on the construction and evaluation of the English Exam Skills (EES) test for primary school children. The DAS English Exam Skills Programme (EESP) has been very successfully implemented at DAS over the years, with highly significant improvements noted in previous research (Leong, 2015; Leong et al., 2017; Elfira et al., 2018). However, to accurately establish the effectiveness of the EESP, it is also important to ensure that the testing procedures used are optimally reliable and valid. Here, the test paper itself is evaluated for reliability in identifying high and low achievers, leading to a new EES test, performance was significantly higher after the programme and the results correlate with school-based tests. This evaluation and refinement is a major step forward for a test that has already demonstrated high levels of academic performance. The analyses not only helped to establish the

construct validity of the newly developed test but made it possible to predict EESP students' performance on their school and national examinations. In addition, such analyses helped to gauge the effectiveness of the EESP curriculum and the English Language development of dyslexic learners in primary schools.

Exploring the Effectiveness of the English Examination Skills Programme on struggling learners.

This study serves as a follow-up to previous research which explored the classroom practices of the EESP that contributed to significant progress made in the components of grammar, vocabulary and reading comprehension by students with dyslexia enrolled in the EESP, as compared to those who were not. This suggested that the structured, cumulative and progressive nature of the EESP curriculum and a teaching approach that emphasises the regular and consistent use of multisensory modalities, keywords and questioning technique have benefitted the students and potentially, those who demonstrate similar struggles in aspects of language and literacy but do not have a dyslexia diagnosis.

Studies have revealed that students with dyslexia and those with other language and literacy difficulties such as Specific Language Impairment (SLI) share similar genetic traits that suggest the importance of developing both oral and language skills. This study has also identified some of the principles of the OG approach which align with the direct instruction methodology (Lewis & Doorlag, 2005) and the Universal Design for Learning (UDL) framework that has been developed to provide access to learning opportunities that all individuals deserve (Hall, Strangman & Meyer, 2003). It, therefore, hypothesised that literacy programmes aimed at supporting learners with dyslexia may also benefit learners with language difficulties, with or without dyslexia diagnosis.

A total of 10 students from Primary 3 to 6 with no official diagnosis of dyslexia participated in this study. They attended classes for one hour per week over a period of 20 weeks. Results of their pre- and post-tests, progress logs as well as teacher and student interviews were analysed. It was observed that students generally demonstrated greater awareness of concepts taught throughout the duration of the study. Despite some inaccuracies, students were generally able to apply the concepts and strategies that were explicitly taught and modelled by the teachers especially in attempting Synthesis and Comprehension questions, as well as Reading Comprehension questions. Students were observed to be making effort to highlight keywords, numbering paragraphs and identifying target words in questions, skills which were previously not observed in the Pre-Test.

Despite the positive indicators of success mentioned above, the study was limited by

its sample size to represent the population of struggling learners. There were also concerns over the lack of frequency and intensity of support provided since the duration for each session is only one hour per week. A heightened intensity and frequency of class, as well as an extended duration of support, are some of the recommendations made as considerations for future research.

5. QUALITY ASSURANCE

All Educational Therapists (EdTs) in our programme are equipped with the content knowledge and skills prior to teaching PREP 2 PSLE classes. To ensure the consistent delivery of a quality programme, all PREP 2 PSLE dual specialists will be observed by a Core Member during the annual Quality Assurance Audit (QAA) process every financial year. The annual QAA lesson observation evaluates each teacher in 3 main aspects: lesson execution- where the focus is placed on maintaining a consistent lesson delivery structure, communication with students and class management- regulation of a class of students with varied abilities. One-to-one feedback to individual EdTs is provided after the lesson observation, where EdTs are also engaged in reflecting on their own teaching experiences and practices.

6. TEACHER TRAINING

Existing EdTs who have expressed interest to teach PREP 2 PSLE as a dual specialization must have at least two years of prior teaching experience at the DAS. EdTs on Flexi scheme (previously known as sessional EdTs) who have no prior experience teaching the Main Literacy Programme at the DAS have to undergo two certificate courses: i) Certificate in Understanding Dyslexia and ii) Certificate in Dyslexia and Literacy Teaching. All new applicants will then undergo 5 sessions of training for the Certificate in Supporting Learners in English Exam Skills course, which is jointly conducted with the DAS Academy.

These newly recruited PREP 2 PSLE teachers were provided with opportunities to understand the theoretical background, programme objectives, topics and concepts in the PREP 2 PSLE curriculum and to plan and deliver lesson components as part of the training and assessment.

In addition, all PREP 2 PSLE teachers are required to attend teacher training INSETS (In-service Education and Training) at the start of each term, facilitated by the Core and Contributing members who are also the programme's curriculum developers. A total of 3 INSETS were conducted in March, June and September, where teachers were encouraged to share their experiences and the challenges they faced in

conducting PREP 2 PSLE classes. Topics discussed include the facilitation of differentiation techniques for PREP 2 PSLE classes, classroom management strategies and updates on resource development for curriculum. The teachers were also provided with training on new curriculum development and administrative matters.

PREP 2 PSLE teachers who took on the role of teaching STPs in Oral English Exam Skills, Comprehension Cloze and Pre-Secondary bridging programme have received additional training from the respective curriculum developers. There are a total of 3 PREP 2 PSLE teachers who underwent training in order to deliver STPs in Oral English Exam Skills and Comprehension Cloze during week 12 of the December Holidays. All PREP 2 PSLE teachers were trained and equipped to teach the Pre-Secondary Bridging Programme during the INSET conducted in September 2018.

7. NEW INITIATIVES TAKEN FOR 2018

Launch of English Pre-Sec Bridging Programme in Term 4, 2018

The Pre-secondary Bridging Programme provides students with a glimpse into the secondary school English curriculum. It was developed as a result of feedback obtained from both parents and school teachers of the need to provide graduating P6 students with continuity of support to prepare them for the demands and expectations of the secondary school English syllabus. A total of 34 out of 52 P6 students continued into term 4 for the programme.

For the first 2-3 weeks in the lead up to English PSLE paper, students were guided through an intensive revision and consolidation of key concepts to prepare them for the exams. Subsequently, the pre-sec programme lessons were delivered and provided the graduating P6 students with exposure to some of the basic expectations and required skills in the areas of grammar editing, active listening and note-taking skills and visual text comprehension.

Programme Name Change

The idea for a programme name change was mooted out of concerns over the lack of awareness and confusion that may potentially arise out of the vast array of English literacy remediation programmes offered at the DAS. Its previous name - English Exam Skills Programme does not seem to provide sufficient information on the literacy and skill areas covered.

We believe that the proposed name change better defines what the programme stands for, which is to help our students cope with the demands of the English Paper

2 examination for students from P3 leading up to PSLE. As the areas covered in the programme are Grammar, Synthesis & Transformation, Editing and Reading Comprehension, all of which are components of the English Paper 2 that students commonly struggle in, the name change would better reflect the scope of curriculum coverage. In addition, we hope to avoid confusion among EdTs, parents and students that our programme includes Composition Writing skills (English Paper 1) and hence, facilitate easier recognition at first glance.

8. ENGAGEMENT AND AWARENESS

The PREP 2 PSLE team believes that parental involvement and engagement are crucial to a child's holistic development. In line with this, PREP 2 PSLE has developed free Parent-Support Group (PSG) talks to provide parents with tips and strategies to support their child with components of the English Paper 2. Five talks were conducted for the year 2018, reaching out to a total of 96 parent attendees. These talks were held at Bishan, Chua Chu Kang, Serangoon, Bedok and Tampines learning centres.

Two topics were covered, the first of which was Grammar: Subject-verb agreement (SVA). Parents were introduced to the fundamentals of SVA, exploring areas such as identifying subjects, understanding different types of nouns and checking for tenses. As teachers, we felt that mastering SVA will help students have greater accuracy and clarity when forming a sentence in their speech and writing. While some rules of subject-verb agreement may seem simple and obvious, others are more difficult and complex which was the main reason why it was felt that SVA was an appropriate topic for the PSG talk.

The second topic of the PSG talk was Comprehension Cloze: Cloze the Deal. Teachers shared with parents, some tips and basic steps on how to approach a comprehension cloze passage, as well as in tackling questions related to the topic of collocations. Parents were also given a sneak peek into the curriculum offered in the Cloze Passage Short Term Programme (STP). At the end of both sessions, an easy-to-apply checklist was also shared with parents as a take-home kit to help their children at home.

9. TESTIMONIALS

DAS Exam Skills Programme

The above programme has been most useful for my son, Gregor.
The focus is on comprehension, synthesis and transformation which are the areas that my son had the most difficulty in. The programme breaks down the various paragraphs and taught him how to look for clues in the link between the paragraphs and sentences. These are great useful skills for Gregor as he always had difficulty establishing the link. The bite-size worksheets have been most encouraging in helping him see that exams can be conquered with the right strategies. Most important of all, Teacher Siti who steered the lessons and catered to the individual needs of her students was the key motivation for Gregor to look forward to her lessons every week. It is her expertise and love for the students that the programme experience has been further enhanced.

Thank you for your expertise, sincerity, love and the belief in Gregor.

You have definitely made a difference in him.

Mrs Christie Koh Mother of Gregor Koh Jun Jie

This programme has helped me in preparing for my exams and I have learnt to highlight key points. I do not like comprehension as there is a lot of reading and I do not know many words. However, Teacher Siti has taught me that I can still do well without recognising all the words as long as I can apply the strategies and look for clues to link the paragraphs together.

She is very kind, patient, helpful and I have enjoyed her lessons.

Thank you Teacher Siti!

Gregor Koh Jun Jie P6 student of Temasek Primary School, 2018

10. SUCCESS STORY

TAN YE KAI,
13 years old
Sengkang Learning Centre

Tan Ye Kai was enrolled in PREP 2 PSLE from Term 1 of 2017 to Term 4 of 2018 (Primary 5 to 6). Dyslexia has clearly impacted Ye Kai's learning from a young age. Since lower primary, Ye Kai has experienced minimal success in the English Language and was consistently failing his school's English examinations. He has difficulty decoding, which affects his reading fluency and spelling accuracy.

As a result, his ability to score for components of the English Paper 2 was severely hampered.

However, Ye Kai has good oracy skills, which played an important role in the development of his progress in the programme. For example, through the practice of annotation for reading comprehension component, Ye Kai is able to annotate passages with pictorial graphics and symbols to aid his understanding as the teacher reads the passage aloud. Over time, Ye Kai gained greater confidence in tackling the passage independently. Although he still reads at a slow pace and struggles to decode words, he has reached a level of automaticity in annotating a passage whenever he comes across familiar looking words or simply piece recognisable words together to get the gist of the main idea.

During the teaching of synthesis and transformation component, Ye Kai is able to comprehend the changes required when instructions are scaffolded into bite-sized steps and delivered in a sequential and cumulative manner. Where previously Ye Kai would simply 'copy' the question itself as the answer, he could subsequently get at least some components of the answers correct.

Ye Kai's weaknesses are made up for by his strengths in oracy and expressive skills. He is able to comprehend verbal instructions and very positive to feedback given on his errors. Although he struggles in phrasing his written responses, Ye Kai is able to provide accurate answers verbally. He thrives in a flexible learning environment that gives him opportunities to make mistakes and offers guidance and support to bridge his gaps in learning.

Despite experiencing multiple failures for his academic subjects, Ye Kai has always maintained a positive and jovial outlook. He takes these failures in his stride and has persisted in giving his best every lesson.

Both of Ye Kai's PREP 2 PSLE and Main Literacy Programme (MLP) educational therapists were taken by surprise by the tenacity and perseverance Ye Kai displays despite his weaknesses and constant failure in school. True enough, a huge part of his achievements are as a result of Ye Kai's dedication and consistency in taking small steps to improve academically. Ye Kai's ability to experience small successes in getting practice questions right, gaining confidence and familiarity with exam-type questions and piecing together the little strategies he had learnt and using them to tackle the English exam paper has helped him overcome his learning issues.

According to Ye Kai's father, Mr Tan, the school teachers, principal and Mr Tan himself were initially very worried for Ye Kai's PSLE results and were even in discussion to plan the next step ahead should he fail his PSLE. Ye Kai has never passed his exams up till the Primary 6 preliminary exams. Mr Tan and his teachers alike described Ye Kai's PSLE results as a 'miracle'. Mr Tan has expressed his gratitude for the help Ye Kai received through the PREP 2 PSLE programme which enabled him to improve and 'absorb exam techniques' and ultimately contributed to his advancement to secondary school.

Ye Kai is currently attending Spectra Secondary school, a specialized school where the focus is on students learning at a differentiated pace and recognizing the different spectrum of talents and strengths in students. Ye Kai's teachers at the DAS strongly believe that he will continue to grow from strength to strength in a learning environment that is nurturing and supportive.

REFERENCES

- Elfira, T., See, E., Tan, S. H. J., & Leong, E. (2018). Exploring the effectiveness of the English Examination Skills Programme on struggling non-dyslexic learners. *Asia Pacific Journal of Developmental Differences*, *5*(2), 141-162.
- Hall, T., Strangman, N., & Meyer, A. (2003). Differentiated instruction and implication for UDL implementation. Wakefield, MA: National Center on Accessing the General Retrieved December 28, 2018, from http://www.cast.org/publications/ncac_diffinstructudl.html
- Leong, E. (2015). Improving English exam skills for dyslexics in primary education in Singapore. *Asia Pacific Journal of Developmental Differences, 2*(2), 184-201.
- Leong, E., Asjamiah, S., & Wang, A. (2017). Exploring the classroom practices of the English Exam Skills Programme for Singaporean primary school children. *Asia Pacific Journal of Developmental Differences, 4*(2), 167-194.
- Lewis, R. B., and Doorlag, D. H. (2005). *Teaching Special Students in General Education Classrooms* (7th ed), Upper Saddle River, NJ: Pearson-Merrill-Prentice Hall.

ABOUT THE AUTHORS



TUTY ELFIRA RAZAK Programme Manager for PREP 2 PSLE

Tuty is a Lead Educational Therapist and a Programme Manager of the Prep 2 PSLE team. Since she joined the Dyslexia Association of Singapore in 2010, Tuty is driven by the belief that teaching with compassion is the essence to a more meaningful learning journey for all children. With a keen interest in helping children with dyslexia bridge learning difficulties, Tuty believes that picture books are flexible literary forms that encourage creativity, broadened minds and imagination in both children as well as adults. Tuty has a Bachelor of Arts degree in Sociology by the National University of Singapore and has also attained a Masters in Special Educational Needs from the University of South Wales. Her research interests include self-efficacy, social-emotional learning and promoting philosophical thinking among children and young adults.



SITI ASJAMIAH ASMURI

Senior Educational Therapist

Siti Asjamiah Asmuri is a Senior Educational Therapist who joined the Dyslexia Association of Singapore in 2012. Over the years, she has been teaching and working with students with dyslexia and other co-morbidities such as Attention Deficit Hyperactivity Disorder (ADHD) and Speech and Language Impairment (SLI). She is also currently a Core member of the PREP 2 PSLE Programme (PREP 2 PSLE) team and has been a contributing member since 2013 where she has been directly involved in curriculum and resource development, evaluation and research, training and extending support to both students and parents in challenging components of the mainstream school and PSLE English Exams.

Siti attained her Post-Graduate Certificate in Specific Learning Differences (SPLD) in 2014 and is currently pursuing a Master of Education in Curriculum & Teaching at NIE-NTU. Together with her colleagues in the PREP 2 PSLE, she has since completed and co-presented a paper at the NIE Conference and UNITE SPLD Conference in 2017. She has a special interest in curriculum design and programme/curriculum evaluation and hopes to enrich her professional journey in education with her direct and continued involvement in providing support for learners with special educational needs. She also hopes to continue motivating her students to pursue their passion and instil in them the innate curiosity and desire to constantly seek knowledge in their fields of interest.



WANG DINGXIONG ANDY *Lead Educational Therapist*

Andy has over six years of practical experience in the field of Specific Learning Differences, especially Dyslexia. His current work as a Senior Educational Therapist at the Dyslexia Association of Singapore (DAS) since 2012 has allowed him to take on a practical hands-on approach and remediation for students with various special needs. He is a member with the Register of Educational Therapists (Asia) and actively contributes to the curriculum development of the PREP 2 PSLE Programme at DAS as a core team member. Andy has a keen interest in increasing public awareness and understanding of Dyslexia. His role as an awareness speaker has helped DAS in reaching out to various audience platforms - educators, parents, medical practitioners and the general public. His postgraduate academic achievements include a Postgraduate Certificate in Special Educational Needs with the University of South Wales and a Master of Education (Special Education) with the National Institute of Education, Singapore.

Seeing our dyslexic students' improve not just academically, but also in their self-esteem and confidence bring great joy and fulfilment to Andy.

Specialised Educational Services UNLOCKING POTENTIAL

PRESCHOOL PROGRAMME

The aim of the programme is to identify and support preschoolers who are experiencing early literacy learning difficulties, or with early literacy gaps develop early literacy skills and strategies, thereby equipping them with the best possible foundation.

OUR APPROACH

The SES Preschool programme helps preschoolers acquire a good foundation in alphabet knowledge and phonograms, leading to word recognition, vocabulary and comprehension skills essential for reading. In class, pupils will be taught structured phonics, comprehension skills, sight words and skills to blend and segment words. These abilities gear preschoolers towards reading and spelling readiness. They will also be taught strategies to cope with letter reversals. The programme follows a prescribed scope and sequence for systematic, sequential and cumulative teaching.

Components covered in a typical lesson

- Alphabet Knowledge
- Phonological Awareness
- Learned Word Knowledge
- Shared Reading
- ♦ Early Writing (e.g. fine motor skills, pre-writing skills, handwriting skills and/or basic sentence construction)

Preschoolers will be advised to go for a School Age Psychological Assessment if they have not responded to appropriate instruction in the language when they turn six years old. Children diagnosed with dyslexia have the option to continue with the DAS Main Literacy Programme.

DAS Specialised Educational Services Preschool Programme

Suthasha Kelly Bijay¹, Weng Yiyao², and Shakthi Sathiasilan²

- 1. Preschool Programme Manager and Senior Educational Therapist
- 2. Senior Educational Therapist

Dyslexia Association of Singapore

1. INTRODUCTION

The Preschool Early Literacy Programme (PELP) was started in 2006 for Kindergarten 1 and 2 preschoolers experiencing early literacy learning difficulties, literacy learning gaps and/or show dyslexia type tendencies. The aim of the programme is to support preschoolers develop early literacy skills and strategies, thereby equipping them with the best possible foundation.

The components covered in our programme includes oracy, alphabet knowledge, letter formation, letter-sound association, phonological awareness, sight words, shared reading and early writing. The teaching approaches and curriculum are guided by Orton-Gillingham principles, Nurturing Early Learners (NEL) Language and Literacy Curriculum and early childhood pedagogy. The lessons are individualised to cater to a child's learning progress. Opportunities are created within the classroom for preschoolers to experience success.

2. PROGRAMME DESCRIPTION

Entry Criteria

Preschoolers in Kindergarten One and Two, who are identified with early literacy learning difficulties, gaps in pre-literacy learning compared to same-age peers and/ or with dyslexia type tendencies.

Exit Criteria

Preschoolers who have completed Kindergarten 2 at the end of the year.

Who the Programme is for

Children with early literacy learning difficulties in:

- pre-reading skills: learning to sing the alphabet song, letter recognition, letter-sound knowledge, blending sounds together to read words, recognising high-frequency words, guessing wildly at words, confusion over similar looking words (e.g. no/on)
- pre-spelling skills: learning to spell, hearing the individual sounds in a word (e.g. d-o-g for 'dog'), separating sounds apart e.g. cat (c/a/t), identifying the beginning, middle and ending sound
- pre-writing difficulties: writing own name, letter formation in both upper and lower case

If difficulties are persistent despite supportive efforts from home and school, enrolment into our programme is highly recommended. Formal diagnosis for dyslexia is not required for enrolment into our programme.

3. EVALUATION OF PROGRAMME FOR 2018

GAINS IN LITERACY

A quantitative approach was used to measure participants' pre-post test scores during their early literacy intervention journey.

Method

Participants

Data was collected from 257 students (152 male, 105 female), primarily made up of 27 Kindergarten One and 230 Kindergarten Two students. Students attended an average of 61.02 (SD=36.4) hours of intervention.

Materials

DAS PELP's Preschool Informal Test Kit was used as the pre-test and post-test measure. Seven areas were assessed. These were alphabet knowledge, phonogram knowledge, phonemic awareness, learnt words, ability to read, ability to spell (combinations ranging from vc, cvc, ccvc, ccvcc to cccvcc (v = vowel, c = consonant)) and sentence copying competency.

Procedure

Students were pre-tested upon entry into the programme using DAS PELP's Preschool Informal Test Kit. Specific gaps in the learning of the seven areas were carefully noted and early literacy intervention plans were drawn up accordingly. Early literacy intervention was then carried out holistically using sound early childhood pedagogy guided by OG principals. Intervention progress was carefully monitored and recorded. Students were post-tested at the end of the programme year with results again recorded. The results indicated statistical significance in all five areas of literacy as shown below.

Table 1. Results of Paired Samples t-test comparing pre-test and post-test.

GROUP	N	MEAN	SD	Т	DF	Р
Alphabet Knowledge Pre-test	257	68.68	34.45	-18.59	256	0.000
Alphabet Knowledge Post-test	257	103.96	19.11			
Phonogram Knowledge Pre-test	257	13.82	9.39	-26.88	256	0.000
Phonogram Knowledge Post-test	257	28.37	8.05			
Phonemic Awareness Pre-test	15	2.07	3.31	-6.81	14	0.000
Phonemic Awareness Post-test	15	12.53	5.95			
Leant Word Knowledge Pre-test	257	10.52	13.88	-18.68	256	0.000
Learnt Word Knowledge Post-test	257	25.45	16.54			
Reading Ability Pre-test	257	1.04	2.34	-20.2	256	0.000
Reading Ability Post-test	257	7.07	5.39			
Spelling Ability Pre-test	257	1.01	1.78	-17.65	256	0.000
Spelling Ability Post-test	257	5.6	4.67			
Sentence Copying Pre-test	209	14.16	16.33	-18.18	208	0.000
Sentence Copying Post-test	209	36.55	10.8			

^{*}Discrepancy in N due to incomplete data

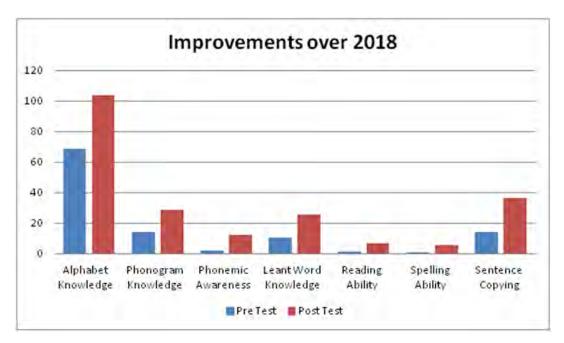


Chart 1. Comparison of literacy improvements at pre and post-test across seven areas: alphabet knowledge, phonogram knowledge, phonemic awareness, learnt word knowledge, reading ability, spelling ability and sentence copying.

The results indicated as with previous year highly significant improvements in all seven components with large effect sizes.

4. RESEARCH CONDUCTED

Research has shown that the early years is critical for children's progress in literacy and learning. Previous research has shown that the Preschool Early Literacy Programme led to significant improvements in early literacy with large effect sizes. However, it was unclear how much of the improvement was facilitated over time by maturation and by attendance in kindergarten. A controlled study with a repeated measures design investigated the impact of this Programme on struggling learners. 14 participants from the control group and 13 participants from the intervention group completed a pre-assessment battery followed by post-assessment 10 weeks later. The intervention group underwent 20 hours of early literacy intervention over 10 weeks while the control group did not attend any form of intervention. The results indicated that the experimental group outperformed the control group in the areas of phonogram knowledge, phonemic awareness, high-frequency words, reading and spelling.

In late 2018, the preschool team embarked on a control group study. The team started collecting literacy-based data over 12 weeks from children who were not attending intervention as part of an ongoing initiative to more stringently evaluate efficacy of the PELP intervention programme.

5. QUALITY ASSURANCE

To ensure Educational Therapists are providing a high-quality programme, classroom observations are conducted every financial year. In addition, an annual programme evaluation is conducted to monitor students' progress and the effectiveness of the programme. Meet-The-Parents sessions are conducted twice a year to inform parents of their child's progress.

6. TEACHER TRAINING

All Preschool Dedicated and Dual-Specialists Educational Therapists have completed a Professional Certificate Course in Preschool. Dedicated Preschool Educational Therapists hold at least a Diploma in Preschool Education or relevant qualifications in Early Childhood. All therapists are required to attend In-Service Training (INSETS). These sessions were conducted with the objective of ensuring our Therapists are equipped with the skills to use new curriculum resources, educational app and assessment kit in their classroom. They were also trained in the processes and procedures for school-aged assessment and progress report writing. Furthermore, peer-to-peer learning was encouraged in the form of sharing and presentation of seminar slides.

INSETS conducted in 2018

Curriculum training	Move It with Boggles			
	RAZ-Kids			
	Revised Pre and Post Informal Assessment Kit			
Processes and procedures	School-Aged Assessment			
	Progress Report Writing			
Peer-to-Peer learning	Preschool Seminar 2018			

7. NEW INITIATIVES TAKEN FOR 2018

Initiative 1: Revision to existing Pre and Post Informal Assessment Kit

Pre and post informal assessment kit was revised to better capture the early literacy ability of individual preschoolers in our programme. Yopp-Singer Test of Phoneme Segmentation was included to assess a child's phonemic awareness. Selection of words from the reading and spelling list was amended to nonsense words. This helped assessor determine if the child was able to blend or read, segment or spell nonsense words by applying their letter-sound knowledge. Sentence writing was added to assess the child's ability to copy words from a sentence by staying on the line, penmanship and forming letters of consistent size with appropriate spacing between words.

Research has shown that the early years is critical for children's progress in literacy and learning. Previous research has shown that students in the Preschool Early Literacy Programme made significant improvements in early literacy with large effect sizes. However, it was unclear how much of the improvement was facilitated over time by maturation and by attendance in kindergarten. A controlled study with a repeated measures design investigated the impact of this Programme on struggling learners. 14 participants from the control group and 13 participants from the intervention group completed a pre-assessment battery followed by post-assessment 10 weeks later. The intervention group underwent 20 hours of early literacy intervention over 10 weeks while the control group did not attend any form of intervention. The results indicated that the experimental group outperformed the control group in the areas of phonogram knowledge, phonemic awareness, high-frequency words, reading and spelling.

8. ENGAGEMENT AND AWARENESS

Seminars and conferences

To empower educators, parents and practitioners with practical skills and knowledge to support preschoolers they are working with, Preschool Team shared their expertise through various platforms.

- ♦ The 6th Preschool Seminar 2018 was held on 16 March 2018.
- In June, participants from UNITE SpLD had the opportunity to experience hands-on activities of the literacy activities carried out within our preschool classroom.

In October, our team was represented at two conferences. First, Educational Therapists conducted an 'Understanding the development of early writing skills for children at risk of learning difficulties' workshop at Early Childhood Development Agency (ECDA) Early Childhood Conference 2018. Second, a poster presentation on 'The effectiveness of family literacy programme on Singaporean preschoolers at risk of literacy difficulties' at the International Dyslexia Association (IDA) Conference 2018.

Public Screening

To reach out to preschoolers at risk of literacy difficulties, 4 public screenings were conducted during the March, June, September and November school holidays. In-school screenings at PCF Admiralty and PCF Ghim Moh Link were carried out with their K1 and K2 students to identify preschoolers at risk of literacy difficulties. These intervention classes were offered at their school during curriculum time.

Awareness Talk and Learning Journeys

The preschool team conducted a total of 30 awareness talks for kindergartens and childcare centres across the island in 2018. The preschool team also hosted Learning Journeys from NIEC - SEED Institute for their trainee preschool teachers to find out more about preschoolers with early literacy difficulties, and our Preschool Programme.

Parent engagement

To engage parents, School-Aged Assessment (SAA) talk was held at the cluster area. Parents were informed of the purposes, processes and procedures involved in SAA. It was an opportunity for parents to clarify questions they have with the preschool teachers.

Collaboration

Preschool team mentored 2 final year students from Ngee Ann Polytechnic's Diploma in Child Psychology and Early Education through internship attachment. They attended INSETS and produced 16 sets 'Onset and Rime' resource kit that complements with the Preschool curriculum.

9. FEEDBACK AND TESTIMONIALS

Parent Feedback	Rating
1) My child appears more confident, happier	****
My child's school teacher(s) tell me that my child is generally doing much better in class	****
3) My child has shown improvements in literacy	****
4) My child is able to apply what he/she has learnt	****
5) My child has benefitted from the programme	****
6) I am happy with the preschool intervention programme	****

Parent from Queenstown Learning Centre

"My child loves going to DAS class which he doesn't normally does with other enrichment classes. Cherith is a great teacher- attentive to my child's need, very clear and specific with her teaching, make learning great and fun for my child, and it has definitely helped my child grow in his confidence and ability in English. We appreciate all that she did for him."

Parent from Bedok Learning Centre

"I am so happy with the preschool intervention programme given by Teacher Raihana.

I myself can see improvement on my child. As a parent, I am so glad about that.

Teacher Raihana has been an excellent teacher always updating me about my child's learning so that I will know what revision to do with my child at home.

She has been very cooperative all these while and I really appreciate it.

Thank you Teacher Raihana for your patience and passion and keep it up!"

K2 Student from Jurong Point Learning Centre

"We have so much fun in class. We also have a short break in class to relax.

There is nothing that I do not like about DAS."

K2 Student from Bishan Learning Centre"I love DAS because we can play and do work."

10. SUCCESS STORY

by Preschool Educational Therapist - Cherith Wong from Queenstown Learning Centre

"Z was a quiet and reserved K2 girl who joined Preschool Programme in late January. She would only respond to me in whispers when absolutely necessary. She had weak letter recognition, letter-sound knowledge and poor sight word knowledge. She displayed reversals in her alphabet writing and could not blend sounds to read nor catch the individual sounds in words, which aids spelling. She was unable to blend cv words and could only write the last sound when given cvc words.

Despite her quiet disposition, she did her work efficiently and accurately. She tried to participate in class discussions and was very willing to learn. As Z loved art, I implemented many elements of art and craft into my lesson. To encourage her to interact with her peers and me, we played sight word games that involved communicating and moving around the classroom.

She showed significant improvement after 9 months with us. At the end of the year, she was able to recognize over 30 sight words as well as blend and spell CCVC/CVCC words. She was also able to read words like 'switch' which amazed me. Her father mentioned that she really enjoyed coming for DAS lessons and had improved significantly since receiving intervention from us."

Z's Pre-Test	Z's Post-Test
Letter Formation and Sequencing Write uppercase letters in alphabetical order.	Letter Formation and Sequencing Write uppercase letters in alphabetical order. White uppercase letters in alphabetical order. White uppercase letters in alphabetical order. White uppercase letters in alphabetical order. Response in the property of t
₩ ®	Write lowercase letters in alphabetical order.
Write lowercase letters in alphabetical order.	* a b d b e f * 9 h i j k l * m n o P t y * 5 † u v w x * X Z 25

ABOUT THE AUTHORS



SUTHASHA KELLY BIJAY

Preschool Programme Manager and Senior Educational Therapist

Kelly joined Dyslexia Association of Singapore (DAS) in 2012, and over the years has worked with diverse group of pupils. Kelly holds a Master's Degree in Special Educational Needs (MASEN) and Second Upper Honours Degree in Early Childhood Education (BEd Hons).

Currently, Kelly oversees the Pre-School Early Literacy Programme (PELP). She supports the development of the specialised curriculum and resources, and carries out training for pre-school trainee teachers. She also teaches and finds working with preschoolers, especially those who need additional support meaningful. Kelly has presented in conferences such as DAS Preschool Seminar (2015), and Early Childhood Conference (2016) organised by Early Childhood Development Agency (ECDA).



WENG YIYAO

Senior Educational Therapist

Yiyao is a Senior Educational Therapist and a core team member of DAS Preschool Programme. She joined Dyslexia Association of Singapore (DAS) in 2014 and has over the years been teaching and working with students and preschoolers with dyslexia and early literacy difficulties. She has presented at conferences such as DAS UNITE SpLD in 2018, DAS Preschool Seminar in 2016 and 2017 and Early Childhood Conference 2016 organised by Early Childhood Development Agency (ECDA). She is also a member of the Register of Educational Therapist Asia (RETA). Her teaching philosophy is to engage the child in the way he or she learns best.



SHAKTHI BAVANI SATHIASILAN

Senior Educational Therapist

Shakthi has been an Educational Therapist with the Dyslexia Association of Singapore since 2015. She works with both preschoolers with early learning difficulties as well as primary and secondary school students with dyslexia. Shakthi graduated from James Cook University with a Second Upper Honours Degree in Psychology and is deeply interested in the application of research in teaching. She is also a member of the Register of Educational Therapist Asia (RETA) and enjoys learning from children.



PRESCHOOL EARLY LITERACY INTERVENTION

Specialised
Educational
Services
UNLOCKING POTENTIAL

OUR AIM

The SES Preschool Programme aims to help pre-schoolers at risk of having dyslexia or developmental delay in early literacy, acquire skills and strategies to become confident achievers when they enter primary school.



COMPONENTS COVERED IN A TYPICAL LESSON:

- Spelling
- · Reading
- Phonograms
- · Alphabet knowledge
- · Sight words
- · Social-emotional learning

OUR APPROACH

Three key features of our approach:

- 1. Hands-on and multisensory activities: In teaching alphabet knowledge, phonograms and sight words.
- 2. Interactive and engaging lessons: When practicing skills and strategies in reading, spelling and writing.
- 3. Incorporation of Social-emotional Literacy (SEL) in sessions: To foster soft skills necessary for greater Primary 1 readiness.

RECOMMENDED FOR

K1 and K2 children attending kindergarten, childcare centre and/or EIPIC programmes who have difficulties in learning to read, spell and/or write.

Preschoolers in our programme will be advised to go for a School Age Psychological Assessment when they turn 6. Children diagnosed with dyslexia have the option to continue with the Main Literacy Programme.

For more info, visit www.das.org.s

Specialised Educational Services

UNLOCKING POTENTIAL

SPEECH AND DRAMA ARTS

The aim of the programme is to develop literacy, communication and presentation skills and boost the self-esteem of learners with dyslexia. Drama can be that powerful tool to help increase the self-esteem and confidence of students with learning differences.

OUR APPROACH

Using drama activities, students have the opportunity to enhance their persuasiveness and confidence in communication. Students are given the freedom to express themselves freely, using their imagination and creativity. Other vital communication skills that are fostered in the class setting includes listening and concentration. Activities ranging from role-playing to stage performances require students to understand the fundamentals of stage directions, character dialogues, music and light cues. To stage a production necessitates the child to understand and interpret the script, process the script indepth. This allows them to work on the working memory and processing speed. Class sizes are kept to a maximum of 10 students per class and are conducted once a week in a 1.5 hour session.

The programme consists of different modules catering to different age groups:

- Creative Drama Programme
- Literacy through Drama Programme
- Educational Drama Programme

At the end of each module, parents will be invited to watch the progress of their children. This will also help in giving our students the experience and exposure of performance making. A certificate of participation and progress report will be given to students upon completion of each module.

DAS Specialised Educational Services Speech and Drama Arts

Muzdalifah Hamzah^{1&2}, Amrit Kaur Gill² and Corinne Ang²

- 1. Speech and Drama Arts Programme Manager
- 2. Senior Educational Therapist and Drama Teacher Dyslexia Association of Singapore

OVERVIEW OF THE SES SPEECH AND DRAMA ARTS PROGRAMME

We at the Dyslexia Association of Singapore (DAS) recognise Speech and Drama Arts as an effective means of developing our students' talents and self-confidence, which in turn can lead to a more positive self-concept for a student. Our goal is to provide an outlet for students to express themselves, their inner feelings and emotions and to demonstrate their talents in a fun and artistic way.

The Speech and Drama Arts Programme focuses on three main goals. The first goal is to develop drama and acting skills. The next one is to develop language skills through drama activities and the third goal is to enhance the social-emotional development of the students.

PROGRAMME DESCRIPTION

Understanding the background and characteristics of our dyslexic students has allowed the team to develop a programme that would enhance their learning journey and discover their potentials.

Develop Drama and Acting Skills

The majority of our students have difficulties in expressing and communicating their thoughts. Drama activity such as role-play provides stimulation to students to express themselves creatively using imaginative skills. Ranging from classroom lessons to stage performances, students are required to understand the fundamental of stage directions, character dialogues, music and light cues. Drama, being a multimodal

pedagogy, uses props, body language, facial expressions, sounds and images along with words to convey meaning (Palechourou and Winston, 2012).

Develop Language Skills

Within the drama experience, our students are given the opportunity to draw and make meaning not only from their spoken language but also the physical context combined with visual and aural cues. Hence, our goal is to provide an outlet for our students with dyslexia to use language in a fun, creative and engaging setting.

Through Drama, language learning is now an interactive and participatory process that engages learners emotionally and playfully (Winston, 2012). According to Winston (2012), drama is a multimodal form of pedagogy that engages students' interest at a different level of entry. A multimodal form which combines visual, aural, verbal and kinesthetic language allows students to retain a particular learning experience firmly in their minds (Chang, 2012). Also, the 'malleability' of the learning process enables teachers to swiftly respond and adapt to any student's comments, questions or ideas (Chang, 2012).

Critical Thinking

Critical thinking is an active and systematic cognitive process that requires applying the things that we learned, in order to understand ourselves and the events which occur in our environment (Noris, 1985). Creative thinking skills are vital in promoting creativity (Pekdoğan and Korkmaz, 2016). Drama activities such as role-play will promote creativity in interpreting and establishing any social situations (Heatchcode, 1991). Studies support the concept that drama provides insight on perspectives of the various characters and settings. By analysing and understanding perspectives of others in drama activities, it sharpens the skill of critical thinking as common situations are looked at from multiple angles.

Enhance Social-Emotional Development

Dyslexia does not only affect the academic component of learning – literacy but also emotional well-being of a student (Eadon, 2005, Thomson, 2009). Thomson asserted that if children with dyslexia could overcome the "I am dyslexic and I can't do it" attitude, then it would increase their self-esteem and determination to succeed. Therefore, Drama is a powerful tool for building self-confidence, which in turn can lead to a more positive self-concept for our students (Eadon, 2005, Winston, 2012).

Other than building rapport among students and teachers through drama activities, we create opportunities for students to discover their strengths and weaknesses,

re-consider their thoughts, attitudes and their feelings in the light of shared experience with their peers, learn to work together, to cooperate, to contribute, and to listen to and accept the viewpoints and contributions of others and to be a good team player.

Curriculum

There are four individual modular-based programmes, catering to different age groups, in our Speech and Drama Arts programme.

- ♦ Creative Drama Programme for ages 6-8 years
- ♦ Literacy Through Drama for ages 9-12 years
- ♦ Educational Drama for ages 13 14 years

Entry Criteria

The entry criteria for the Speech and Drama Arts Programme: - K2, primary school and lower secondary school students are welcome to enrol. The Speech and Drama Arts Programme is open to both DAS students and non-DAS students.

Who the Programme is for

The Speech and Drama Arts Programme is recommended for students who want to explore the learning of language through drama skills while improving their self-esteem and ability to express themselves.

Approach to Teaching

This specialised programme is planned such that students participate in both guided and self-directed activities that will engage them kinaesthetically and cognitively. The activities facilitated during lessons encourage affective aspects of reading and literacy while offering multiple opportunities for meaningful communication, social interaction, discussion and feedback.

Orton-Gillingham (OG) principles are incorporated into our lessons to ensure quality and effectiveness.

Orton-Gillingham Approach:

- Language-based Exposure to different texts to enhance students' appreciation of the English language through Drama.
- Cognitive the activities are crafted to engage their cognition e.g.

- creative story writing, roleplay, improvisation, memorising scripts, rehearsing and performing with movements and cues
- Structured, Sequential and Cumulative includes direct and explicit instruction and has a different range of difficulty level for all activities
- Simultaneous multi-sensory engage through stage and hand props, presentation of skills through multiple senses, eg. Using visual and aural cues
- Diagnostic-prescriptive Drama Instructors regularly assess students' abilities and adapt activities according to the class dynamics.
- Emotionally sound Drama Instructors are trained in the special needs field, hence they have a better understanding of our students' needs and strengths.

EVALUATION OF PROGRAMME

Student Number

Table 1 shows the breakdown of student enrolment in 2018. On average, 35% of our students require bursary in order to access the programme.

Table 1: Student Enrolment in 2018

	TERM 1 2018	TERM 2 2018	TERM 3 2018	TERM 4 2018
Enrolment	34	36	38	44
Actual No. of students on Bursary	10	10	14	20
% of students on Bursary	29%	28%	37%	45%

School Project

In addition to the student number above, we have served 10 Secondary 1 students from St. Theresa Convent in Term 4 (2018) through our school-based drama workshops.

QUALITY ASSURANCE FOR SPEECH AND DRAMA ARTS PROGRAMME

We assure the quality of the programme by the appropriate placement of students. Before placing the students in our SDA classes, the Educational Therapists teaching the DAS Main Literacy Programme (MLP), are required to fill up a form indicating information such as CBA score, behaviour profile and type of learner the student is. This is so that the drama instructors have prior knowledge of the students. Next, we evaluate our students' progress after each drama module is covered, by using rubrics to evaluate four different components/ skills taught during 10th lessons. A progress report will be given upon completion of each level to the parents. Other areas we look into to assure the quality of the programme are quality of our curriculum/lesson plans, class observation by Programme Manager and obtaining feedback from parents.

TEACHER TRAINING

The training is designed for the EDTs who wish to do dual-specialisation in Speech and Drama Arts. The course provided the knowledge and skills required to teach Speech and Drama lessons. The total duration of the course is 20 hours. At the end of the course, there will be a summative assessment leading to awarding a competent learner with a Professional Certificate Course (PCC).



INITIATIVES

Trial Class

EVENTS	TERM / LC	2018
SDA Trial Class	Term 2	
	Bedok LC	19 May 2018

School Holiday Workshops

EVENTS	TERM / LC	2018
SDA Workshops	Term 1	
	Bishan LC	12-14 March 2018
	Term 2	
	Bishan LC	28, 30 & 31 May 2018

Parents' Engagement Talks

EVENTS	TERM / LC	2018
SDA Segment in Journey from Preschool to MLP	Term 3	
Talk	Bedok LC	1 st September 2018
Coffee Talk	Sengkang LC	3 rd September 2018

School Projects

CHIJ St. Theresa's Convent

SDA team had the opportunity to conduct the Speech and Drama Arts Programme to 10 Secondary One students. It was a 5-day workshop which was held on 29 October – 2 November 2018. The content of the workshop was based on the school's literature text, "The Pearl" by John Steinback. The workshop was designed to build their confidence, develop literacy, comprehension, communication and presentation skills.

At the end of Day 5, the teacher was given a feedback form to complete. It was a 'Yes/No' questions. She responded positively to all 6 questions pertaining to the following:

- a. Students enjoyment
- b. Workshop benefits to the students
- c. Recommendation of the workshop to new students
- d. DAS Instructors preparedness
- e. Class management & engagement with the students
- f. Overall satisfaction

ENGAGEMENT AND AWARENESS

1. SDA Performance in UNITE SpLD Conference 2018 - Monkey King

On 22nd June 2018, 19 students from Bishan Learning Centre performed for both local and international guests at the UNITE SpLD conference at Lifelong Institute of Singapore. The play titled "Monkey King" is an adaptation of Wu Cheng-En's famous novel "Journey to the West" that was published in the 16th century. The students amazed the audience with their marvellous acting skills and articulation.

2. Coffee Talks For Parents At Sengkang Learning Centre

Positive self-esteem has far-reaching effects on an individual's life. It has been linked to general well-being, quality of relationships and even one's ability to stay resilient in times of difficulty. For some children with learning difficulties, developing healthy self-esteem can be challenging. The aim of the presentation was to increase the awareness of self-esteem and how it affects a child's overall development.







3. SDA Performance in DASStudent GraduationHang Tuah, The Great Warrior

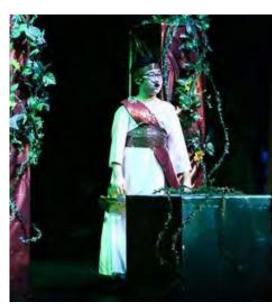
The Speech and Drama Arts (SDA) programme did it again by presenting a remarkable year-end performance for DAS Student Graduation. On 24th November 2018, 30 SDA students graced the stage of SUTD. The 30 students were



from Bedok Learning Centre, Bishan Learning Centre and Queenstown Learning centre. The legend of Hang Tuah lies close to the hearts of many in the Malay community all over the world. While there are several versions of the legend out there, SDA's adaptation focused on Hang Tuah's growing up years, his talent in Silat, his rise to fame within the royal court and the ultimate sacrifice he had to execute to hold his honour, duty and loyalty. Bishan Learning Centre students kicked off the show on a high note with a Dikir Barat performance. The students had rehearsed the play for 3 months with great effort.







SUCCESS STORY

Noah Yap

Noah Yap, a cheerful and diligent student was in the Speech and Drama Arts (SDA) programme at Dyslexia Association of Singapore (DAS) for the past 2.5 years. During this period, Noah had performed in class showcases and 2 productions - Shakespeare 400 in 2016 and The Journey of the Legends in 2017. The exposure to the elements of drama and with the great support from his family and teachers, Noah decided to pursue his passion in Theatre Arts after PSLE. He was shortlisted to attend the Talent Academy at SOTA where he had to go through auditions and interviews. We received a piece of good news from his mother informing us that Noah had gained admission into SOTA.

Noah's Reflections

"Some of the tasks of the SOTA Interview were similar to what I had done in my SDA classes, so I felt a little at ease. I also managed to use some of the skills taught at my SDA classes, such as the skills set for monologue, emotions and usage of space. Playing dual roles in the SDA performance also came in handy during the SOTA audition as I was required to play two roles, a transition from a man to a werewolf. Hence, I had to pay attention to my voice and emotion".

"The most memorable moment would be standing on stage in front of the huge audience; it wasn't just once but twice! It was really a memorable moment as I had the chance to express myself in a different light in front of such a big audience. That also gave me the confidence to apply for SOTA."



REFERENCES

- Baldwin, P., & Fleming, K. (2003). *Teaching Literacy through Drama: Creative Approaches*. Oxfordshire: RoutledgeFalmer
- Chang, L. S. (2012). "Dramatic' Language Learning in the Classroom', in Winston. J. (ed.) Second Language Learning Through Drama: Practical Techniques and Applications. (pp. 6-14).Oxfordshire: Routledge
- Chauhan, V. (2004). Drama techniques for teaching English. The *Internet TESL Journal, 10*(10).
- Eadon, H. (2005). *Dyslexia and Drama*. London: David Fulton Publishers Limited
- Faupel, A. (2003). *Emotional Literacy Assessment and Intervention Ages 7-11.* London: GL Assessment Limited.
- Gardner, H. (2003). 'Multiple Intelligences After Twenty Years', American *Educational Research Association Annual Meeting, Chicago, 21 April.* [Online] Available at http://howardgardner01.files.wordpress.com/2012/06/mi-after-twenty-years2.pdf
- Heatchcode, D. (1991). *Collected writings on education and drama*. Northwestern University. Norris, S. P. (1985). Synthesis of research on critical thinking. *Educational leadership*, 42(8), 40 -45.
- Palechorou, E., & Winston, J. (2012). 'Theatre, Language Learning and Identity (2):
 Empowering Additional Language Learners through Classroom Drama Projects'. In J.
 Winston, (ed.) Second Language Learning Through Drama: Practical Techniques and
 Applications. (pp. 42-53). Oxfordshire: Routledge
- Pearson, B. (2001). *Multiple Intelligences*. Available at http://www.barbarapearson.com/philosophy.html (Accessed: 27 October 2014)
- Pekdoğan, S., & Korkmaz, H. I. (2016). "An Experimental Study on Development Critical Thinking Skills via Educational Drama as a Teaching Method." *International online journal of educational sciences 8.*(3)(2016).
- Thomson, M. (2009). *The Psychology of Dyslexia. A Handbook for Teachers.* 2nd Ed. London: Wiley
- Winston, J. (2012). Second Language Learning Through Drama: Practical Techniques and Applications. New York: Routledge

ABOUT THE AUTHORS



MUZDALIFAH HAMZAH
Speech and Drama Arts Programme Manager
Senior Educational Therapist and Drama Instructor

Muzdalifah has been with the DAS since 2012. She provides intervention for learners with dyslexia on the Main Literacy and Speech & Drama Arts (SDA) programmes. In addition, she is also the Programme Manager for SDA programme. Besides teaching literacy and drama classes, her responsibilities include overseeing and leading a team in developing curriculum and teaching resources, ensuring the quality of the programme and overseeing the aspects of SDA performances in DAS events or showcases.

Muzdalifah has a strong interest in the social-emotional development in children with learning difficulties. She had presented her work in conferences and hopes to inspire her students to believe in themselves as unique individuals who possess boundless capabilities.



AMRIT KAUR GILLSenior Educational Therapist and Drama Instructor

Amrit has been with the DAS since 2012. She provides intervention for learners with dyslexia on the Main Literacy programme and the Speech & Drama Arts (SDA) programme. In addition, she is also the Core Team Member for the SDA programme. Besides teaching literacy and drama classes, she also contributes to developing the Speech & Drama Arts curriculum and teaching resources. Currently, Amrit is pursuing her Masters Degree in Education (Special Education) from Nanyang Technological University (NIE-NTU). Amrit has a strong passion for working with students with dyslexia and in helping them to achieve their goals.



CORINNE ANGSenior Educational Therapist and Drama Instructor

Corinne has been with the DAS since 2013. She provides intervention for learners with dyslexia on the Main Literacy and Speech and Drama Arts (SDA) programmes. In addition to teaching, she is also involved in the marketing aspects of SDA and developing curriculum and teaching resources together with the team.

Corinne has a strong interest in working with children with ADHD and behavioural difficulties. She hopes to equip herself with relevant strategies to target their difficulties more effectively. Currently, Corinne is pursuing her Master's Degree in Education (Special Education) from Nanyang Technological University (NIE-NTU).



SPEECH AND DRAMA ARTS PROGRAMME

Specialised
Educational
Services



OUR AIM

The aim of the Speech and Drama Arts Programme is to develop literacy, communication and presentation skills and boost the self-esteem of learners with dyslexia. Drama can be that powerful tool to help students with learning differences.



The programme consists of three different programmes catering to the different age groups as listed below:

- · Creative Drama (6-8 years old)
- · Literacy through Drama (9-10 years old)
- · Educational Drama (11-14 years old)

At the end of each module, parents will be invited to watch the progress of their children. This will also help in giving our students the experience and exposure of performance making. A certificate of participation and progress report will be given to studens upon completion of each module.

OUR APPROACH

This specialised programme is planned such that students participate in both guided and self-directed activities that will engage them kinaesthetically and cognitively. The activities conducted during the lessons encourage the development of the affective domains of a child while offering multiple opportunities for meaninful communication, social interaction, discussion and feedback. Through stage performance, students also have the opportunity to understand the fundamentals of stage directions, character dialogues, music and light cues. The curriculum and lesson deliveries are influenced by Multiple Intelligence (MI) Theory that has a profound impact on thinking and practice in drama education and the Orton-Gillingham (OG) approach.

RECOMMENDED FOR

Students with low self-esteem or low self-confidence, students who have difficulties expressing themselves as well as students who enjoy drama.

Class sizes are kept to a maximum of 10 students per class and are conducted once a week in a 1.5 hour session.

For more info, visit www.das.org.sg



SPEECH AND LANGUAGE THERAPY PROGRAMME

Specialised
Educational
Services
UNICOKING POTENTIAL

OUR SPEECH AND LANGUAGE THERAPY SERVICES

Speech-language therapy services provided at the DAS include both speech and language assessment and therapy.

OUR SPEECH AND LANGUAGE THERAPY

Speech-language therapy is meant for children (pre-schoolers to secondary school students) with speech, language and communication needs, who may or may not have a diagnosis of dyslexia. Therapy focuses primarily on oral language and on improving a child's listening, understanding, speaking, and/or social skills. Therapy is conducted following an intervention model in which therapy is determined by an individual's unique needs, whereby core deficits are addressed through a diagnostic/prescriptive approach based on clinical reasoning and remediation is provided at the level of hypothesized breakdown, independent of a curriculum, using speech and language intervention principles, protocols, methods, strategies and techniques that have demonstrated efficacy in addressing the hypothesized breakdown.



SIGNS OF SPEECH AND LANGUAGE DIFFICULTIES

Some indicators that your child might have speech and language difficulties:

- · Delayed speech and language developmental milestones
- · Mispronounces sounds in words (e.g. says 'toap' instead of 'soap')
- Shows confusion over words with similar sounds (e.g. mishears 'key' for 'tea')
- Shows difficulty in understanding and following spoken instructions
- · Shows poor understanding of age-appropriate stories
- · Shows difficulty remembering things that people say
- · Shows difficulty in finding the right words to say
- · Relates stories or events in a disorganised or incomplete manner

SPEECH AND LANGUAGE ASSESSMENT

A speech-language assessment is conducted to evaluate a child's speech, language and communication ability and determine whether it is age-appropriate. The assessment will further identify the child's strengths and weaknesses in these areas. If required, a comprehensive report will provide recommendations for intervention and learning support for the child's education. An assessment typically takes about 2 hours, or longer depending on the complexity of the case.

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Specialised Educational Services

UNLOCKING POTENTIAL

SPEECH & LANGUAGE THERAPY

Children start to learn language from the day they are born. As they grow and develop, their speech and language skills become increasingly complex. Children with speech and/or language difficulties will find it difficult to express and make others understand what they want to communicate.

Children with dyslexia and other specific learning differences often have associated speech and language difficulties. These include delayed speech and language development, inaccurate articulation and poor language skills. The child may be intelligent but have a speech and language problem. This will slow down his learning and can be very frustrating for the child and his parents.

DAS Speech-Language Therapists (SLTs) are qualified professionals who assess, diagnose and provide intervention for speech, language and communication-related difficulties in children. A Speech and Language assessment helps to find out if a child's speech and language ability is age-appropriate. It also identifies individual language strengths and weaknesses. An individual intervention plan is then tailored according to the profile of the child obtained from the assessment.

Depending on the child's needs, Speech and Language therapy is conducted individually or in small groups. SLTs aim to build up the child's fundamental speech and language skills to support his learning in school. Therapy is carried out in a child-friendly, lively and bright environment. Language is aided and enhanced through fun and functional activities.

DAS SLTs also provide awareness talks and workshops in the area of speech and language difficulties.

DAS Specialised Educational Services Speech and Language Therapy

Lee Er Ker, Shuet Lian Ho, Sharon Reutens, Elizabeth Lim Yien Yien[,] Tammy Wong

Speech and Language Therapists Dyslexia Association of Singapore

INTRODUCTION

The Dyslexia Association of Singapore (DAS) recognises the importance of Speech and Language Therapy in supporting children with specific learning differences in the Singapore mainstream school population, especially with respect to the diagnosis of speech and language disorders and the provision of appropriate intervention.

The critical role that Speech-Language Therapists (SLTs) play in helping students who struggle with literacy is clearly set out in an official policy statement issued by the American Speech-Language-Hearing Association (ASHA) in 2010 which states that, "(c)urrent research supports the interrelationships across the language processes of listening, speaking, reading, and writing. SLPs contribute significantly to the literacy achievement of students with communication disorders, as well as other learners who are at risk or those who struggle in school settings."

With this in mind, the SLTs at DAS focus primarily on oral language and work on improving listening, understanding, and speaking skills, as well as social skills, all of which are critical components in the development of speech and language in children, while Educational Therapists focus primarily on key essential learning components that are recommended for an effective literacy intervention, including language and vocabulary, phonemic awareness, phonics, morphology, reading fluency, listening/reading comprehension, and writing.

The scope of work of SLTs at DAS is based largely on the description of speech and language therapy as prescribed in the Second Schedule of the Allied Health Professions Act 2011, which states that, "Speech and Language Therapy involves the assessment, diagnosis, treatment and management of communication disorders" and that "communication encompasses spoken and symbolic representations of language (i.e. written, pictorial, signed), and takes into consideration hearing, auditory processing, understanding, expressive language, articulation, fluency, resonance, voice, prosody, non-verbal and social skills."

Speech and language therapy at DAS is consequently determined by the individual child's needs. Issues with speech and language are addressed by remediating core deficits and building up speech, language and communication skills, guided by best practice, in an interactive and multisensory learning environment so that children can be enabled to reach their full potential in accessing the DAS Main Literacy Programme (MLP) at DAS, as well as the curriculum in mainstream schools.

PROGRAMME DESCRIPTION

Entry and Exit Criteria

Speech and language therapy at DAS can be accessed by children with speech and language difficulties which slow their learning and make everyday interactions frustrating. These difficulties may take the form of delayed speech development, imprecise articulation, poor language skills, poor social communication skills, issues with the use of voice, and/or issues with speaking fluently (also known as stuttering or stammering). Speech and language therapy at DAS is open to children ranging from pre-schoolers to secondary school students, with or without a diagnosis of dyslexia, regardless of whether they are enrolled in any other DAS programme at the time of enrolment.

The SLTs at DAS are experienced in working with children diagnosed with language disorders, dyslexia, various specific learning disorders, developmental language delay, global developmental delay, and/or autism spectrum disorder, amongst others.

Children are discharged from speech and language therapy when they have achieved the goals targeted in their Individual Intervention Plans (IIP). The IIPs are decided in conjunction with parents, as well as the students themselves where applicable (i.e. for older students).

Who the Programme is for

Speech-language therapy is suitable for children who have Speech, Language and Communication Needs. These children may experience difficulties with speech (mispronunciation or distortion of sounds when speaking), language (difficulty understanding or expressing him/herself at an age-appropriate level), pragmatics (difficulty with social skills like interacting with others at an age-appropriate level), fluency (stammering/stuttering), and voice (issues with loudness and/or quality of voice used), or a combination of these.

EVALUATION OF PROGRAMME FOR 2018

Speech-language Therapy Student Numbers

Students who underwent speech-language therapy were between six and sixteen years old. They attended one-hour weekly individual or group speech and language therapy sessions at one of the DAS Learning Centres across Singapore, namely Bishan, Jurong Point, Tampines, Parkway Parade and Woodlands. Most of the speech and language therapy students were also attending the DAS Main Literacy Programme (MLP).

The breakdown of student numbers, the number of SLTs, the number of bursaries provided for beneficiaries per term in 2018 is as follows:

2018	TERM 1	TERM 2	TERM 3	TERM 4	TOTAL
STUDENT ENROLMENT (includes students from school- based SLT programmes, i.e. SLT Service @ Northlight School)	147	152	173	171	643
NUMBER OF SLTS	4	5			
NO. OF BURSARIES AWARDED TO BENEFICIARIES (DAS General Pool)	70	66	71	79	286

Speech-language Assessments Conducted

Besides conducting therapy, the SLTs at DAS conduct speech and language assessments which assess a student's speech as well as his/her receptive and expressive language abilities. These assessments seek to identify an individual's strengths and weaknesses with respect to speech and language. Each assessment includes an interview with the child's parents to obtain case history as well as the completion of both dynamic assessments and standardised assessments such as Clinical Evaluation of Language Fundamentals® - Fifth Edition (CELF-5) by the student. CELF®-5 is a comprehensive and flexible assessment used to assess a student's language and communication skills, determine the presence of a language disorder, describe the nature of the language disorder and provide directions in therapy planning.

In 2018, the DAS SLTs conducted a total of 3 speech and language assessments, with the breakdown per term as follows:

2018	TERM 1	TERM 2	TERM 3	TERM 4	TOTAL
Number of Speech-and-Language Assessments conducted	0	0	1	2	3

Workshops and Training

In addition to the provision of regular therapy and assessment services in 2018, SLTs were actively involved in conducting workshops and training, as well as raising public awareness. Workshops were run for students, and training was provided to both DAS staff, parents, education professionals and members of the general public.

The table on the following page details the training conducted by DAS SLT's in 2018

RESEARCH CONDUCTED

The SLTs followed through with the evaluative study on the effectiveness of DAS speech and language therapy that was initiated in 2017. The study utilised a small-n quasi-experimental design with a control group without random assignment of participants to conditions (i.e., an intervention/therapy condition and a control condition). A total of 12 participants with the intervention/therapy condition and 11 participants in the control group were pre- and post-tested using the core subtests of

DATE	ТҮРЕ	EVENT TITLE	PARTICIPANTS	SLT(S) INVOLVED	NO.
15 Mar 2018	Preschool Seminar 2018	Workshop: Nurturing Social Skills in the Early Years	Parents and education professionals	Elizabeth Lim and Lee EK	~160
21 & 28 April 2018	External Training (DAS Academy)	Certificate in Understanding Speech and Language Impairment	Parents and education professionals	Ho Shuet Lian and Lee EK	13
20 Jun 2018	UnITE SpLD 2018	Pre conference session: Overview of SLT	Parents and education professionals	Elizabeth Lim and Ho Shuet Lian	35
22 Jun 2018	UnITE SpLD 2018	Presentation: Speech Language and Communication Needs - Case Studies	Parents and education professionals	Ho Shuet Lian and Lee EK	~150
1 Aug 2018	In-house Inset	AET Training	DAS Educational Therapists	Tammy Wong	4
18 & 25 Aug 2018	External Training (DAS Academy)	Certificate in Understanding Speech and Language Impairment	Parents and education professionals	Sharon Reutens and Tammy Wong	11
20 Aug 2018	External Training	Classroom Support for Learners with Speech and Language Disorder at NorthLight School	Teachers from Northlight school	Ho Shuet Lian	20
21 Nov 2018	External Training (DAS Academy)	Master of Arts in Special Educational Needs – Contexts and Concepts module (Speech & Language Development & Difficulties)	Education professionals	Elizabeth Lim	10
22 & 23 Nov 2018	SES Workshop	Getting Ready and Staying Happy in Primary School for K2 – P2	K2 - P2 students	Ho Shuet Lian and Lee EK	8
22 & 23 Nov 2018	SES Workshop	Social Communication for Growing Kids	P3 - P5 students	Elizabeth Lim and Sharon Reutens	9

the CELF®-4 standardized language assessment. All participants have been recommended to seek SLT support by psychologists, medical, allied health or education professionals. Participants in the control group were on the waitlist during the period of study and are progressively being offered SLT service after the study as SLT slots become available. Only the participants in the intervention/therapy condition undergo therapy for at least a school term between the pre- and post-test. The assessment results of participants from both groups have been statistically analysed and compared to see how the language skills of those who have undergone intervention/therapy have developed compared to those who have not done so. A write-up of the study is in progress.

QUALITY ASSURANCE AND THERAPIST TRAINING

Student progress is monitored and tracked through the students' ability to meet targeted goals in their Individual Intervention Plans (IIPs) as therapy progresses. In addition, the team has completed undertaking a small evaluative study on the effectiveness of DAS speech and language therapy in 2018 and will be reporting the results in an upcoming write-up.

To ensure consistent quality in the delivery of speech-language therapy, there is considerable emphasis on therapist training. Every DAS SLT undergoes at least 50 hours of Continuing Professional Development (CPD) per year, attending in-depth training in specialised clinical-related areas and in working with the target population, engaging in case sharing on a regular basis, and participating in additional workshops for self- and professional development through teams-teaching teams, etc. Newly qualified SLTs who join the team are mentored by more senior SLTs in strict accordance to Allied Health Professions Council (AHPC) Supervisory Guidelines.

All DAS SLTs, other than Ms. Tammy Wong who joined the team in early 2018, are registered with Full Registration with the Allied Health Professions Council (AHPC) and hold current and valid practising certificates, renewable every two years.

NEW INITIATIVES TAKEN FOR 2018

Expansion of Workshops and Training Undertaken

 Curriculum Development for New Programme: Self-Awareness and Social Communication Programme @Assumption Pathway School In May 2018, the SLT team had the exciting opportunity to embark on a project to develop a Self-Awareness and Social Communication Programme for Teenagers, to be launched and implemented at Assumption Pathway School (APS) in January 2019. After the proposal for this programme was accepted in Term 4, Ms. Elizabeth Lim began writing up the curriculum framework, programme goals, learning outcomes and topics for the development of the 15-week programme targeting APS Year 1 teenage students. The detailed content of the programme was developed in partnership with the Speech and Drama Arts (SDA) and Main Literacy Programme (MLP) teams, making this the first inter-department programme project for SLT. The programme is scheduled to be implemented over Terms 1 and 2 in 2019 and is projected to benefit more than 100 APS students in 2019.

 New Student Workshop: Social Communication for Growing Kids (for middle to upper primary students)

Over the years, more and more parents of DAS speech-language therapy students have expressed concern over the social development and emotional regulation of their children. This has included not only children transiting from kindergarten to the early primary years, but also students who have been attending primary school for 3 or more years. Parents have expressed concern that their children continue to struggle with the formation and maintenance of friendships even during the middle and upper primary years. Additionally, these students lack the age-appropriate social skills for successful collaboration with other students in group projects, and some have evidenced difficulty exercising restraint and managing their anger when things do not go their way.

With these needs in mind, content for a new social skills workshop targeted at middle and upper primary students with more complex social communication needs was developed, focusing on social thinking behaviours, which include, consideration for others, self-awareness, perspective-taking, understanding that there are unspoken rules of behaviour when we are in the presence of others, and exercising flexible thinking, self-control and self-regulation. The 7-hour workshop was conducted over 2 days on 26 and 27 December 2018 at DAS Jurong Point Learning Centre. The workshop was fully subscribed with 9 DAS Primary 4 and 5 students participants.

 Increased Involvement at UNITE SpLD 2018: UNITE SpLD 2018 Pre-Conference Session

The SLT team conducted one of the pre-conference sessions titled "Welcome to Speech and Language Therapy in DAS" on 20th June 2018 at DAS Rex House. The training room was filled with participants. The participants had a fun and exhilarating time when they took part in language activities which gave them a taste

of speech-language therapy. The sharing of case studies allowed them to better understand the struggles that students with speech-language disorder experience in their everyday life as well as in learning. At the end of the session, participants gained an understanding that Language Disorder and Dyslexia are distinct developmental disorders. However, students can have two comorbid. They also had an appreciation of the synergy in DAS Main Literacy Programme and Speech-Language Therapy at DAS.

CONTINUED FOLLOW-UP ON PAST INITIATIVES

School-based Programme

Speech-Language Service at Northlight School

Year 2018 is the fourth year that DAS brings speech-language therapy to Northlight School. The school extended the intervention period to 3 school terms as it felt that students would benefit more compared to 2 terms of intervention. An average of 14 students benefitted from speech-language therapy over 3 school terms. Most of them had poorly developed communication skills and 85% of the students seen had comorbid learning differences. At the end of the intervention period, the students became more confident individuals who were able to converse readily with the school vice-principal and/or the school principal.

Training for Parents, Education Professionals and Interns

 Certificate in Understanding Speech and Language Impairment (before title change approved)

A total of 24 participants attended the Certificate in Understanding Speech and Language Impairment course held twice, once on 21 and 28 April 2018, and the second on 18 and 25 August 2018. The participants consisted of special education teachers, mainstream school teachers and parents. The content covered included typical speech and language development, definition of language disorder, speech and language assessments and strategies to help children with language disorders. The course was delivered in a lecture style, with group discussions and hands-on activities. At the end of the two-day course, participants completed a test, in which 100% of participants passed.

Presentation at Unite SPLD 2018: Speech, Language and Communication
 Needs - Case Studies

During Unite SPLD 2018 on 22 June 2019, the SLT team shared insights gleaned from case studies relating to the remediation of Speech-Sound Disorders (SSD) in a presentation. Participants came away more aware of key success factors found to determine therapy outcomes in SSD intervention at DAS, like the use of evidence-based therapy approaches / strategies, student-related factors (motivation; presence and severity of comorbidities; severity of speech disorder), therapist-dependent factors (training, skills, caseload, etc.), service delivery factors (therapy setting; treatment intensity; family support / home practice), and also of the significance of using a combination of different treatment strategies and approaches tailored to the individual context.

◆ Training conducted at Northlight School: Classroom Support for Learners with Speech and Language Disorder

One of the DAS SLTs conducted an in-house training session to 20 Northlight School teachers on 2 August 2018. This session is a sequel to last year's training session. In this session, the teachers gained a better understanding of "Selective Mutism" which was the topic hand-picked by the teachers. Overall, it was an interactive and engaging training session.

 Clinical placement for National University of Singapore (NUS) Master of Science (Speech and Language Pathology) students

Due to the very positive feedback received from students on clinical placement in the previous year, SLTs at DAS were again appointed Clinical Educators to two students from the NUS Master of Science (Speech and Language Pathology) programme during their final placements at DAS from 2 October to 13 November 2018. The two students were guided and mentored in conducting both speech-language therapy, as well as formal and dynamic speech and language assessments, for children with profiles typical of students enrolled at DAS speech-language therapy. They gained considerable first-hand experience conducting intervention sessions and assessments, and benefitted from the knowledge and experience of the SLTs at DAS involved.

Both students gave positive feedback that the SLTs at DAS provided solid guidance which furthered the development of their clinical skills, and they found the SLTs at DAS highly encouraging and supportive throughout the whole placement. The SLTs at DAS involved were grateful for the opportunity to be part of the clinical growth of the future generation of speech-language therapists.

 Master of Arts in Special Educational Needs - Contexts and Concepts module (Speech & Language Development & Difficulties)

On 21 November 2018, Elizabeth conducted a lecture on Speech and Language Development and Difficulties as part of the module on Contexts and Concepts in the Masters in Special Educational Needs conducted by DAS Academy. It was attended by 10 participants made up of DAS educational therapists and other professionals, including a Music Specialist, Brain Fitness Trainer, a professional from India who works with volunteers, and a Disability Support and Health Promotion Manager from China.

The lecture focused on speech and language difficulties evident in various types of Special Educational needs and presented differences and overlaps in the language and literacy learning profiles of students diagnosed with either Dyslexia or Speech and Language Disorder, or both, which have been reported by other researchers in the field of speech and language therapy. The lecture also included the complexities of assessing, diagnosing and providing intervention to children with speech and language difficulties who struggle with learning English in a multilingual environment. Classroom discussions explored how the use of colloquial English and the learning of English as a Second Language may affect the acquisition of the English language among students in Singapore, particularly those with speech, language and literacy difficulties. Finally, the lecture included practical classroom strategies for facilitating language learning in these students.

Student Workshops

Social Skills - Getting Ready and Staying Happy in Primary School for K2 - P2

The Social Skills - Getting Ready and Staying Happy in Primary School for K2 - P2 workshop was conducted at DAS Bishan Learning Centre. It was a 2-day workshop that took place on 22 and 23 November 2018. This workshop was sold out before the registration closing date. A total of 8 students learned how to use their social smarts to stay happy in their primary schools through fun activities, games and stories. Each student received a personalised certificate of achievement at the end of the workshop.

At the end of the workshops, the speech-language therapists included an insightful sharing session with the parents of the children regarding the students' performance during the workshop.



ENGAGEMENT AND AWARENESS

Introduction of Dyslexia Association of Singapore (DAS) Speech-Language Therapy Service to Visiting Professionals from the Shenzhen Children's Hospital

Dr Yang who is the Director of Speech-Language Therapy service and his staff, Miss Yuki, from the Speech Therapy Department in Shenzhen Children's Hospital (SZCH) visited DAS Woodlands Learning Centre on 2nd October 2018. It was a fruitful exchange between Singapore DAS and Shenzhen Speech-Language Therapists (SLTs). Dr Yang and Miss Yuki gained an insight into how DAS SLTs support students with dyslexia at the association. They observed a speech-language therapy session and were given the opportunity to interact with the student who was in the session. The student was diagnosed with dyslexia and speech-language disorder. Dr Yang and Miss Yuki were impressed by the immense learning support given to dyslexic students at DAS to help them better manage their challenges.

PROGRAMME TESTIMONIALS

Subject: SLT Support at Northlight by DAS

HI Ana

Yes, I have met Ms Shuet Lian and she was so kind to let me sit In to observe one of her lesson with my kid.

I have to say it is a very humbling experience for me. It takes a lot of patience and skills accumulated over years of experience to be able to work so well with the SEN kids.

Regards Mdm Sung Mee Har Principal, Northlight School

"I have learnt about writing stories, grammar and also to say about feelings. I like the game (sic) that Teacher Tammy have (sic) given me and the activities that we (sic) done together." – Ng En Ming (2018)

"I love you teacher Tammy, because you are the best teacher for me, I am very thankful, so I will be the best for you." – Hua Xin Ying (2018)

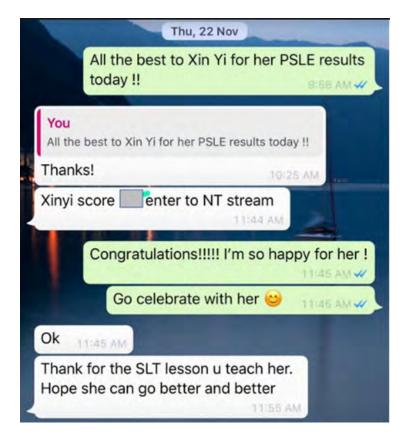
"Dear Teacher Liz, I would like to share a (sic) good news with you, Yufan did well in his O level exam. I am very thankful to have you as his teacher at DAS, thank you for coaching and 'counselling' him, I appreciate your patience and love given to Yufan. Thank you very much"

— Parent of Yap Yu Fan (2018)

"... Mr Lee conducted his lessons in an interesting & engaging way which make Cayden enjoyed his every lesson. Even before Cayden was accepted into SLT, Mr Lee had already started to observe the ways he talked during his DAS preschool program.

Mr Lee had also been communicating with teacher Cheryl Yeo on Cayden's progress, so that therapy would be aligned for the benefit of Cayden. From just speaking a few words at 5 years old to understanding social norms, better pronunciation & better usage of sentence structure, we could see Mr Lee's genuine concern for a student. Cayden had improved greatly under his guidance. Besides spending time to update/advise the parents after every lesson, Mr Lee also went the extra miles to start the lesson earlier or end later, according to the student's needs. He also called to give me advice on Cayden's progress sometimes... We really appreciate his effort for all that he had done for us... (Excerpt from email)"

- Parent of Cayden Yeo (2018)



- Parent of Zheng Xiyi (2018)

SUCCESS STORIES

RYAN KOON

Ryan attended DAS literacy classes from late 2010 to mid-2015, when he graduated from the MAP programme. However, Ryan's Mum felt that Ryan had some difficulty adapting to Secondary school, so she enrolled him in a speech-language group therapy class with Ms. Elizabeth Lim. Ryan attended speech-language therapy with Ms. Elizabeth Lim from January 2016 to May 2018. Initial therapy goals focused on self and social awareness, logical thinking and verbal reasoning.

As therapy progressed, it became evident that Ryan still needed support for advanced language learning, so therapy focus changed to include oral and written language, as well as organization of ideas. His English grades improved from 60 to 68. After making good progress in his verbal reasoning, verbal expression and writing, Ryan was discharged from SLT group therapy at the end of Term 2 in 2018, and was recommended for the trial run of the iSTUDY programme, as Ms. Elizabeth Lim felt that Ryan was ready to take up the learning of study skills for the pursuit of tertiary education.

He is currently (2019) a Year 0 Common Engineering student in Ngee Ann Polytechnic.

This is what Ryan wrote:

"Since young, I had challenges digesting, understanding and expressing myself in English. Years goes by and unknowingly, the problem continues to escalate. Having noticed my struggle, my parents brought me to a therapist psychologist to identify the cause of the problem.

The diagnosis result shows that I am dyslexic and through the dyslexic course, my parents and I became more aware of DAS and the classes it offered. Having noticed that I am still struggling in the area of communication, we had a discussion with a teacher who shares and teaches under "Speech and Language Therapy" with us.

Having and after attending Teacher Eliz's classes, I have learnt and gain more confidence in the areas of oral communication, body language and facial expression when talking to others. I have also understood myself better and learnt what can lead to anxiety and frustration, and at times anger when there is miscommunication.

On top of those, I have gained patience and reminded myself to remain calm and composed in order to express myself in a better way. Teacher Eliz also helped me to improve a lot in my academic area. She taught me guidelines on how to improve my skills in English oral, takes time to ensure that we are able to hone our abilities in writing essays, and more. Teacher Eliz goes the extra mile to make her lessons very interesting.

She would accommodate to our exam schedule to maximize the amount of time to prepare us for the exam. The topics she taught were wide and useful, thus giving me knowledge of what is happening in the world. In short, Teacher Eliz has been a good teacher and guardian mentor who dedicates all her time and resources in moulding me into the best me that I am today, academically and holistically. My heartfelt thanks for her best efforts, utmost care and dedication showered on me.

Ryan Koon 30th April 2019"



HAN FENG

When Han Feng started speechlanguage therapy in 2015, he was in P1 and was unable to speak even simple sentences in English. In fact, early therapy targeted single words because he had to be taught the names of body parts and common objects as well as simple verbs. He also had separation anxiety. As therapy progressed, it became clear that he had complex speech and language difficulties, as he struggled significantly with the pronunciation of many sounds and words, and he could not formulate logical sentences unless the structure had been taught and practised. Additionally, he demonstrated perspective-taking difficulties. In P1 and P2, Han Feng did not pass his English spelling and other English assessments in school.

Han Feng's mother also reported that he struggled socially in school, had difficulty forming friendships, and would experience meltdowns. Therapy continued to target Han Feng's speech and language skills, but a new focus on social interaction and communication was added. In 2017, Ms. Elizabeth Lim conducted a comprehensive assessment of his speech and language abilities, and diagnosed him with expressive language disorder and verbal dyspraxia. Today, Han Feng is a curious, confident and outspoken boy in P5 (2019), who is achieving English language grades in the high 60s.

Asked to write about how speech-language therapy has helped him over the years, this is what he wrote:

Namo: Han Feng Dote: 27/4/2019
How Speech and Language Therapy (SLT) has helped me over the years:
DIT helped to be more confident when I am speaking to my schoolmates and other friends that I have to
2) It helped my English by alot both socially and in the subject in a way that I felt comfortable with the way I learn English in the SLI dass.
3) It helped me to get more friends and now I have alot of friends that I have a good relationship with.
4) It helped my vocab and grammer that when I have this tuiton that I joined cafter) few days/lessons I felt I made a big jump in My language (already).

REFERENCES

- American Speech-Language-Hearing Association. (2010). Roles *and Responsibilities Reflection Tool -Highlighting Language/Literacy*. Retrieved from http://www.asha.org/uploadedFiles/Roles-Responsibilites-Reflection-Tool.pdf
- Beck, I. L., McKeown, M.G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York. Guilford Press.
- Dodd, B., & Gillon, G. (2001). Exploring the relationship between phonological awareness, speech impairment and literacy. *Advances in Speech Language Pathology*, 3(2), 139-147.
- Hall, P.K., Jordan L.S., & Robin, D.A. (2007). *Developmental Apraxia of Speech: Theory and Clinical Practice,* 2nd Edition, Texas, US: Pro-ed Publishers.
- Liberman, I. Y., Shankweiler, D., & Liberman, A. M. (1989). The alphabetic principle and learning to read. In D. Shankweiler & I. Y. Liberman (Eds.), *Phonology and Reading Disability: Solving the Reading Puzzle*. Research Monograph Series. Ann Arbor:University of Michigan Press.

ABOUT THE AUTHORS



LEE ER KER Senior Speech-Language Therapist

Lee is a Senior Speech and Language Therapist who has more than 9 years' working experience working with and helping children in mainstream schools with speech, language and communication needs, with or without a diagnosis of dyslexia, as well as managing speech, language, swallowing/feeding and Augmentative and Alternative Communication (AAC) issues faced by children and teenagers with special needs in both an EIPIC centre and a Special Education (SPED) school, many of whom have multiple disabilities and complex communication needs.

Although the primary scope of his present work involves assessment and intervention, Lee has developed and conducted numerous training workshops for allied health professionals, special education and mainstream school teachers, parents and caregivers over the years. In addition, he has lectured and tutored at the university level for the National University of Singapore (NUS) M.Sc. (Speech and Language Pathology) programme, and is a regular External Clinical Educator for students from the same programme on clinical placement. Since joining DAS, he has co-conducted the Certificate in Understanding Speech, Language and Communication Needs course at the DAS Academy and presented at past editions of the DAS Preschool Seminar and UniteSPLD.

Lee joined DAS in 2016 and is currently registered with the Allied Health Professions Council (Full Registration). Prior to being



SHUET LIAN HO Senior Speech-Language Therapist

Shuet Lian graduated from the National University of Singapore with a Master of Science degree in Speech and Language Pathology. She completed a Master of Business Administration (MBA) programme from the University of Leeds with Distinction. She is a member of Speech And Language Therapy Singapore (SALTS) and is Allied Health Professions Council registered (AHPC). Her work involves providing speech, language and communication assessment as well as intervention services to children with specific learning differences. Her clinical experience includes working with children between the ages of 5 and 16 years. She provides advice and clinical support to educational therapists and newly qualified speech-language therapists at DAS.



SHARON SANDRA REUTENS

Speech-Language Therapist

Sharon Reutens is a Speech-Language Therapist at DAS, who is registered with the Allied Health Professions Council. She is a graduate of the National University of Singapore with a Master of Science (Speech and Language Pathology) and has a Master of Social Science (Professional Counselling) from the Swinburne University of Technology. She joined the DAS in 2013 and her clinical experience involves working with preschoolers to students in mainstream primary and secondary schools, with speech and language difficulties. Formerly a Human Resource Consultant with a Multinational Corporation for 15 years. Sharon's passion lies in enabling students holistically to unlock their potential for life.



ELIZABETH LIM YIEN YIEN

Speech-Language Therapist

Elizabeth has been a Speech and Language Therapist in DAS since 2014. She works with students who have dyslexia and speech, language and communication needs, as well as other co-morbid challenges, such as global developmental delay, attention deficit and autism. She conducts individual and group therapy, and a variety of workshops, for preschool to post-secondary students. She also contributes to the training of new DAS educational therapists as well as other adult learners, such as parents and educators, by lecturing in DAS Academy on speech, language and communication needs. Additionally, being an SLT with a strong foundation in the early childhood profession, she conducts seminars and workshops for preschool educators. Early intervention and remediation with children and youth who have learning challenges is Elizabeth's lifelong passion and mission.



TAMMY WONG *Speech-Language Therapist*

Tammy has been with the DAS since January 2018. She provides intervention for learners with dyslexia and/or speech, language and communication needs. In addition, she is also involved in conducting speech and language assessments and presenting at workshops for special education and mainstream school teachers, parents and caregivers.

Tammy has a strong interest in early language and speech sound development. She is also interested in the socio-emotional development of children with additional learning needs. She is currently registered with the Allied Health Professions Council.

Specialised Educational Services

UNLOCKING POTENTIAL

SCIENCE EXPLORERS

OBJECTIVES

The Science Explorers Short-Term Programmes are designed to provide support for our Primary 3 & 4 students with the Science literacy, understanding of the Science processes, vocabulary knowledge and application of the knowledge and skills to answer Science exam questions in a fun and interactive environment.

STRUCTURE

The Science lesson will be focused on student-centred learning. The Educational therapist is the facilitator who will be responsive to the students' learning needs and knows when and how to introduce students to ideas that will move them forward in their inquiry with multi-sensory activities. The lesson will be structured and organized with inbuilt reinforcements.

DAS Specialised Educational Services Science Explorers Short-Term Programme

Kavitha Thiruchelvam

Programme Leader of Science and Lead Educational Therapist Dyslexia Association of Singapore

SCIENCE EXPLORERS SHORT-TERM PROGRAMME (STP)

In line with MOE syllabus, the Science themes for Primary 3 and Primary 4 students such as Diversity, Systems, Interactions, Cycles and Energy, are included in the respective Science Explorers Short-Term Programmes during school term. Through the inquiry-based learning (IBL) approach, students will learn to engage, explore, extend, elaborate and evaluate Science as an Experiential Learning in their daily lives, society and the environment.

Science lessons will be focused on student-centred learning. The educational therapist is the facilitator who will be responsive to the students' learning needs and knows when and how to introduce students to ideas that will move them forward in their inquiry with multi-sensory activities. The lesson will be structured and organized with inbuilt reinforcements.

Entry Criteria

- The programme accepts both DAS and Non-DAS Primary 3 and Primary 4 students who are diagnosed with dyslexia in their valid psychological assessment report.
- Students must score below 75%.
- Students must have basic reading abilities.

Exit Criteria

- Students will exit when 10 lessons have been completed in the Science Explorers Short-Term Programme of a specific Science theme(s).
- However, students can sign up for another Science Explorers Short-Term
 Programme of a different Science theme in the next term.

Who The Programme Is For

The Science Explorers Short Term Programmes are designed to provide support in a fun and interactive environment for our Primary 3 & 4 students who face challenges with the Science Literacy, understanding of the Science Processes, Science vocabulary knowledge and application of the knowledge and skills to answer Science Exam questions.

EVALUATION OF PROGRAMME FOR 2018

A total of 25 Students who had joined the Science Explorers Short-Term Programmes in both Term 3 and Term 4 in 2018, were evaluated for their progress in their ability to apply their Science knowledge and conceptual understanding in the Pre & Post Assessments. These Pre & Post Assessments were developed for each Science Explorers Short-Term Programme of different Science theme(s). Overall, these students showed great improvement in the Post- Assessments compared to the Pre-Assessments. It is evident that students were able to retain the learned Science concepts upon completion of 10 lessons in a term.

QUALITY ASSURANCE

An annual programme evaluation measuring the progress made by the students is carried out to ensure that the programme is of high quality and its effectiveness. Progress of students is also shared with their parents upon completion of the 10 lessons in the Science Explorers Short-Term Programme.

NEW INITIATIVES FOR 2018

The Science STP is a new initiative that started out off as workshops. In 2017, we had conducted 11 Holiday Science Explorers Workshops and 69 students participated in these workshops. Therefore, due to the high demand and feedback from both students and parents, we decided to launch our first Science Explorers Short-Term Programmes in Term 3 and Term 4 respectively in 2018. The Science Explorers Short-Term Programmes were conducted during school term at 3 DAS Learning Centres

and each term included 10 1-hour lessons. In-line with MOE syllabus, a quality yet a holistic curriculum was developed for both Primary 3 & Primary 4 students.

Table 1: Science Themes conducted in Term 3 & Term 4 in 2018.

TERM/YEAR	SCIENCE THEMES	DAS LEARNING CENTRES
Term 3 / 2018	Interactions Cycles	DAS Woodlands DAS Bishan DAS Parkway Parade
Term 4 / 2018	Systems Energy	DAS Woodlands DAS Bishan DAS Parkway Parade

ENGAGEMENT AND AWARENESS

We invited parents for the 'Coffee and Conversations' event in Term 2, 2018 at DAS Woodlands Learning Centre. It was an informal session with parents and we shared on the latest updates of our programmes at the DAS especially the upcoming launch of Science Explorers Short-Term Programme in Term 3 and Term 4, 2018.

In addition, more awareness of Science Explorers Short-Term Programmes was shared with our fellow colleagues at the DAS during the Full-Staff Meeting so that they could share with our DAS students and their parents.

TESTIMONIALS / SUCCESS STORIES

Parent from DAS Parkway Parade:

Thank you for teaching my son science in a fun and most interactive way possible. Not only his understanding got better, but he has also learnt to love this subject the most. His teachers gave feedback that he did better than what they had expected for SA2 and encouraged me to celebrate his achievement. It'll be wonderful if DAS PARKWAY PARADE continues these Science classes on weekends in 2019. Kids could benefit a lot from it. A very big thank you to you. Appreciate much.

Parent from DAS Chinatown Point:

Thank you for the updates. Our son really enjoys your lessons. He wishes to continue with the program next term and I have already paid for it.

Parent from DAS Yishun:

Dear Teacher, thank you for your patience in teaching my child for the Science Programme. He received his Term 4 results for Science and he passed it. There was a big gap in his Term 4 marks compared to Term 2 which he failed. I hope that DAS would consider having a Science Programme just like Maths & Literacy for kids in Primary 5 & 6. My child benefited and enjoyed the Science programme a lot.

Parent from DAS Bedok:

I would like to commend that your science class has made an impact on our son's learning. He is already struggling with English and Maths so I wanted him to be more prepared for Science in P3. And thank you for taking him in. And it turned out very well! He enjoyed the science classes very much. Somehow, he managed to remember what you had taught him. When I asked him to share what he had learnt when his cousin was around, he turned to ask his cousin about the life cycle of a cockroach. When his cousin made a mistake on the life cycle, he could actually correct her. I was impressed. Thank you for your patience and hard work. Please continue to make science interesting for these kids.

ABOUT THE AUTHOR



KAVITHA TIRUCHELVAM Lead Educational Therapist

Kavitha Tiruchelvam is a Lead Educational Therapist and a Programme Leader for Specialised Educational Services (SES) Science Programme. Kavitha joined the Dyslexia Association of Singapore in 2007 and has been teaching and working with students with Dyslexia and other co-morbidities such as Speech & Language Impairment and Attention Deficit Hyperactivity Disorder. As Kavitha spearheads the Science Programme at DAS, she has conducted 11 SES Science Explorers Workshops for primary students and will be conducting the SES Science Explorers Short-Term Programmes in 2018. She is also a Triple Specialist who teaches the English Exam Skills Programme as well as the DAS Main Literacy Programme. In addition, Kavitha continues to train and give support to her colleagues by sharing her wealth of experiences, especially when working with students who struggle with specific learning difficulties. Kavitha holds a Masters in Inclusive & Special Education from Monash University, a Bachelor of Arts (Hons) with Double Majors in Mass Communication & Marketing and a Cambridge International Diploma for Teachers and Trainers in Dyslexia Studies.

Professional philosophy: The mediocre teacher tells, the good teacher explains, the superior teacher demonstrates but a great teacher inspires. It is indeed the supreme art of the teacher to awaken joy in creative expression and knowledge - quoted by William Arthur Ward



DAS INTERNATIONAL PROGRAMMES

DAS International is a subsidiary of the Dyslexia Association of Singapore





SPECIALIST TUTORING

OUR APPROACH

DAS International has a team of specialist tutors who have extensive experience in supporting students with specific learning differences and other learning needs.

Specialist Tutoring is an individualised, one-on-one service that is tailored to meet the needs of students with learning differences. Tutoring is provided based on the profile of the child obtained from our multidisciplinary team of educational psychologists, speech and language therapists and in consultation with parents and educators. Specialist Tutoring has an individualised problem solving approach where skills focused include:

- Literacy, Numeracy, Oracy, & Writing Skills
- Individual Curriculum support
- Study skills and Exam preparation
- Behaviour and Social support

Our tutors are experienced in the international, private and public school systems; they have an understanding of the curriculum and the demands that today's education systems place on your child. They listen with sensitivity to the concerns that parents have and provide a total solution with an Individualised Education Plan to support their child's needs. Regular verbal feedback is provided at the end of each tuition session. Informal assessments on progress is made to monitor and track your child's progress. We strive to empower successful learning and nurture each individual child to achieve their full potential.

DAS International Services Specialist Tutoring

Anaberta Oehlers-Jaen

Head of DAS International and Programme Director for On-site School Based Programmes Dyslexia Association of Singapore

BRIEF DESCRIPTION OF THE MAIN PROGRAMME

DAS International, a wholly owned subsidiary of the Dyslexia Association of Singapore since its inception in 2011 has been providing one to one Specialist support for students with literacy and Maths challenges through a customised one to one programme. In response to demand DAS International has responded with new initiatives that aim to support students with Specific Learning Differences (SpLds) in Singapore and the ASEAN region.

Services provided by DAS International include:

- Specialist Tutoring
- Regional Awareness
- Overseas Assessments
- Training
- ♦ Consultancy

BRIEF DESCRIPTION OF THE SUB PROGRAMME

This programme is intended for students with Specific Learning Differences such as Dyslexia, Maths Learning Difficulties, who seek or require one to one Specialist Tutoring. Specialist tutoring adopts a problem-solving approach through the development of an individualised programme that aims to bridge the gaps in the child's learning.

SPECIALIST TUTORING

Specialist Tutoring offers an individualised problem-solving approach:

Preschool and Primary Level:

- ♦ Literacy, Numeracy, Oracy, & Writing Skills
- ♦ Behavioural and Social support

SPECIALIST TUTORING FOR HIGHER LEARNING.

It is recommended for students who are currently studying in:

- Upper Secondary
- ♦ International Baccalaureate (IB) Programme
- ♦ GCE A-Level Examinations
- Tertiary Institutes

INTENSIVE SPECIALIST TUTORING

This programme is designed to bridge the learning gap with mainstream education.

- Intensive tutoring is aimed at supporting children who are unable to secure a place in an international school,
- Struggling in an international or mainstream curriculum.

For 2019 we saw a steady stream of students requesting for Intensive Specialist tutoring.

PERSONALISED ONLINE LEARNING EXPERIENCE: ONLINE TUTORING

Specialist Tutoring Sessions are delivered through an online learning platform bringing intervention into the home

- Online lessons are flexible and customised to suit the learners needs.
- Students are located overseas
- Geographical barriers restrict student access to structured support programmes
- Continued support during school holidays



CURRICULUM BASED REMEDIATION

The highlight of this programme is that it provides a strong link between the curriculum and remediation, all the while keeping in mind the child's learning differences. The focus is on the strengths of the learner as the curriculum is explored.

- Bridging remediation and curriculum support
- Extending the strategies and effectively adapting them to curriculum
- ♦ Exam Skills

	SPECIALIST TUTORING	INTENSIVE PROGRAMME	CURRICULUM BASED REMEDIATION
TEACHING AND DELIVERY	 Regular weekly sessions Does not interfere with school hours 	◆ Block sessions◆ Ideal for vacation breaks	 Works closely with school to support homework and curriculum
RECOMMENDED FOR Students who have completed the intensive programme ◆ Students who require a consistent personalised tutoring session		◆ Students who require intensive tutoring to close learning gap with mainstream education	 Students who are lagging behind curriculum Students who require a consistent personalised tutoring session

ENTRY CRITERIA

The programme is open to Preschool students at risk of Dyslexia as well as to Primary, Secondary, and tertiary students with a valid diagnosis of a Specific Learning Difference.

WHO THE PROGRAMME IS FOR

The aim of Specialist Tutoring is to effectively support the development of each child. Each child is seen as an active, competent learner, especially children who have Specific learning differences (SpLd), wanting and in need of a value-added programme / specialist support.

Specialist tutoring is individually tailored, based on the profile of the child obtained both externally through previous psychological reports or through our in-house psycho-educational assessments, and in consultation with parents and educators. Specialist Tutoring further supports the learning needs of our more challenged students who may have difficulty entering International schools in Singapore.

QUALITY ASSURANCE

Classroom observations for all DAS International Specialist teachers are conducted once every financial year to ensure that our teachers uphold the standards of quality teaching set out by the organization. All Specialist Teachers are evaluated on their

Individual Education Plan (IEP), lesson planning, lesson execution, communication, and classroom management to meet the IEP objectives. A total of 8 Specialist Teachers were assessed for quality assurance in classroom teaching practices in 2017-2018. The observations were conducted by the Head of DAS International and contributing members for Specialist Tutoring who are Senior Educational Therapists. The observations were conducted either through in-class or video observations of their lessons.

TEACHER TRAINING

A total of 4 educational therapists, with at least 2 years of experience teaching literacy to students with dyslexia, were trained and they underwent the 15-hour Certificate in Individualized Education Programme (IEP) Planning for an SpLD Learner by DAS Academy, followed by a 5-week practicum with 2 informal and formal observations. In addition, they attended 2 insets conducted by the Head of DAS International. These inset sessions addressed issues such as IEP planning, parent communication, and translating what they had learnt into meeting the one to one IEP short term and long-term goals for their students

DESCRIPTION OF INITIATIVES TAKEN THIS FINANCIAL YEAR

In line with DAS International key efforts to outreach to likeminded organization in the Asia Pacific Region, we initiated at the UNITE SpLD 2018 conference, the hosting of a highly successful International session. We had speakers from the Taiwan Academy of Learning Disabilities (Taiwan), The Anjali Morris Foundation (Pune India) and The Shenzhen Learning Disability Association (China) share their experiences to a captive international and local audience in supporting students with Specific Learning difference. Through networking this has since translated into overseas training opportunities and collaborations with these organizations for FY 2019/20.

5 PLUS + package model:

- Overseas client comes to Singapore for a psychological assessment
- ♦ Receives Intensive Specialist Tutoring (10 or 20 hours) in Singapore
- Concurrently Parent may also seek to attend DAS Academy Training Courses whilst child is receiving Specialist tutoring in Singapore
- Follows up with the Online Specialist tutoring (Online ST)
- Receives periodic Intensive Specialist Tutoring (10 or 20 hours) in Singapore

STUDENT NUMBERS

TOTAL ENROLMENT FOR 2018/19	84
Students attending International schools	34%
Student attending Ministry of Education Schools (MOE)	66%
Specialist Teachers	15

PROFILE OF SPECIALIST TUTORING STUDENTS

PROFILE OF SPECIALIST TUTORING STUDENTS	NUMBER
Dyslexia	53
Dyslexia / Maths Learning Difficulties	14
Dyslexia / Speech and Language Impairment	4
Autism	2
Dyslexia and Autism	3
ADHD	7
Total Number of Students	84

SOURCES OF REFERRAL

SOURCES OF REFERRAL TO SPECIALIST TUTORING	NUMBER
DAS SpLD Assessments Services	27
Word of Mouth—Relatives & Friends	7
Word of Mouth—Teachers	22
DAS Website	28

OUTREACH / INFORMATION SHARING

In total 18 outreach efforts with the International Schools through ongoing awareness talks, information sharing, and case meetings with the Heads of Department and learning support were conducted from April 2018 to March 2019.

INTERNATIONAL SCHOOLS	AWARENESS TALK	INFO SHARING	TEAM MEETING WITH LEARNING SUPPORT & TEACHERS
One World International	√		✓
Overseas Family School	√		√
Eton International East Campus	\checkmark		✓
Eton International West Campus	√		✓
Chatsworth International (Orchard)			√
Chatsworth International (West)			✓
SJI International			✓
ACS International		✓	
Canadian International School West Campus			✓
Canadian International School East Campus			✓
Dulwich College			✓
United World College		✓	
Middleton International School		✓	
UWCSEA East & West Campus		✓	
Insworld		✓	
Australian International			✓
Dover Court Preparatory			✓
Tanglin Preparatory School			✓

PARENT SATISFACTION FEEDBACK & SPECIALIST TEACHERS FEEDBACK

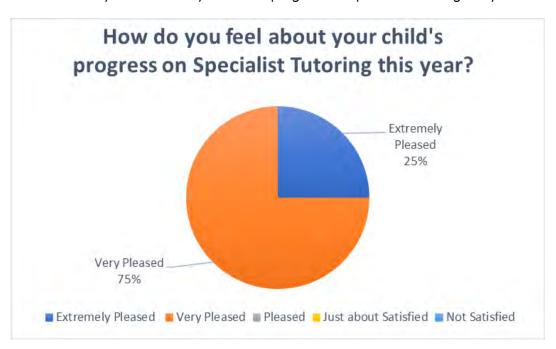
As it's important to keep in touch with parent's views and needs for their children, every year we conduct a parent satisfaction survey. For the 2018/19 evaluation we sought both the parents' satisfaction feedback as well as the Specialist Teachers feedback so that we could compare between the two perspectives given. This would enable us to do the necessary follow up with both parents and teachers should there be significant variances to improve the service and expectations.

HIGHLIGHTS OF PARENTS' & SPECIALIST TEACHERS VIEWS:

Both parents and teachers were asked similar questions.

Parents Questions

1. How do you feel about your child's progress on Specialist Tutoring this year?



Although we had asked 47 parents to complete the survey, we had just 12 responses for the 2018/19 survey. Of the 12 responses 25% were extremely pleased. 75% were very pleased with the overall progress of their child on Specialist tutoring. We felt however that feedback given by the parents is worth mentioning as overall it provided a clear indication of satisfaction with Specialist Tutoring for their children

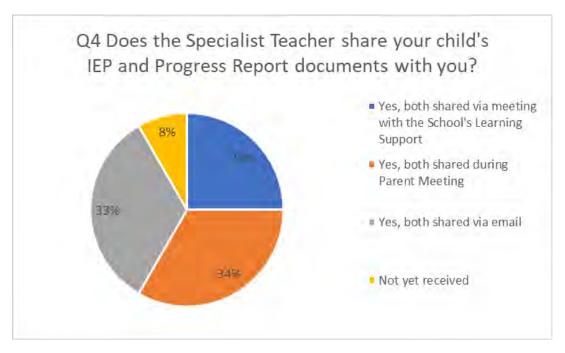
2. Did your child's Specialist Teacher have a discussion with you about your child's prior to commencing Specialist Tutoring?



3. How often would you like the Specialist Teacher to contact you with updates about your child?



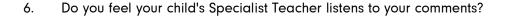
4. Does the Specialist Teacher share your child's IEP and Progress Report documents with you?



The one parent that mentioned they had not received a meeting was conducted between the Specialist Teacher and parent. The IEP & Progress report updated.

5. Does your child enjoy attending Specialist Tutoring?







7. What about Specialist Tutoring or DAS International Services are you particularly pleased with?

Sample responses on open ended questions:

"The approachability of the teacher and the personal connection. I feel my child is treated individually and not like a case"

"Ms Gladys has been very supportive & proactive in all interactions with Suzy & us. She flexible with her teaching methods to suit Suzy's needs and provides us regular feedback"

8. Can you elaborate on the feedback you have selected for the service level you experienced at the DAS Learning Centre

"Ana and Veena have been a great support to myself and my son. They have kept an open communication going with my son's school teachers, which has helped to ensure we are all on the same page".

9. What about Specialist Tutoring or DAS International Services are you disappointed with?

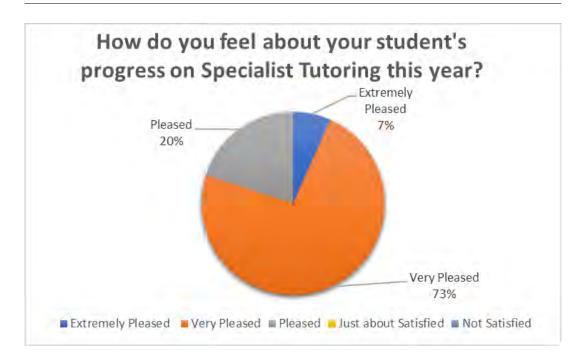
"No disappointment with specialist teacher. Waiting room could be better with some availability of drinking water and wifi for parents.

10. How likely will you recommend Specialist Tutoring to other parents?

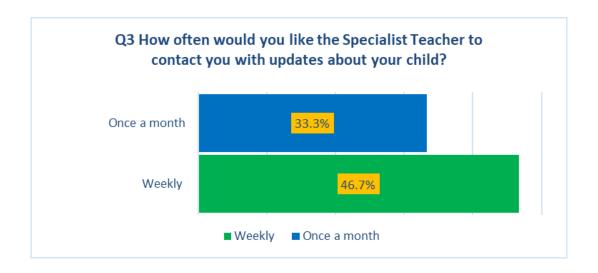


Specialist Teachers Questions

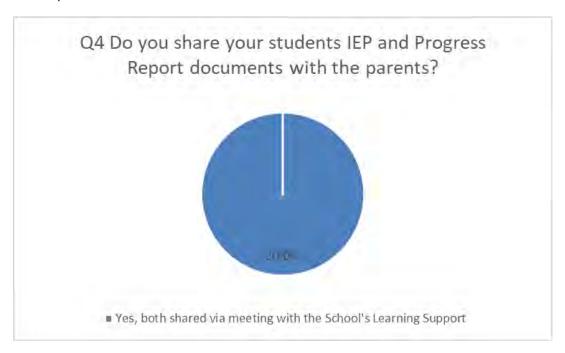
Specialist teachers rated their students progress as follows, 6% (1 teacher) rated extremely pleased. 70% very pleased, 24% pleased. It is interesting to note that 25% of the parents were extremely pleased.



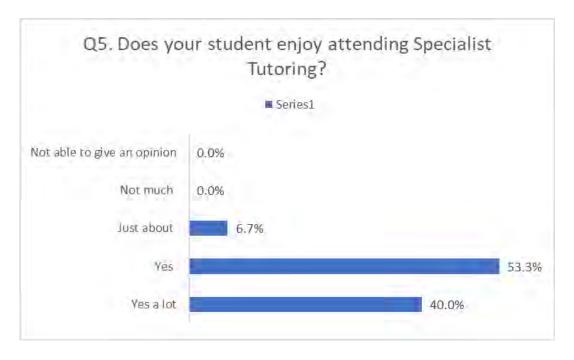
- Did you have a discussion with the Parents about your student's prior to commencing Specialist Tutoring?
 40% of Specialist Teachers met their parents
- 3. How often do you update the parents of your students on Specialist Tutoring?



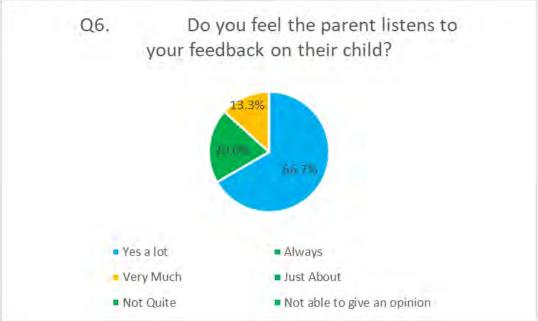
4. Do you share your students IEP and Progress Report documents with the parents?



5. Does your student enjoy attending Specialist Tutoring?







7. What about Specialist Tutoring or DAS International Services are you particularly pleased with and suggestions for improvement?

Sample responses on open ended questions by Specialist Teachers:

"The flexibility to work on the areas that need support, the opportunity to link school learning and remediation, the support given by the entire organisation creating a very healthy knowledge and experience sharing team".

"ST services are great as I can work with a student on a one-on-one basis and have a free hand to create/use/combine resources that I can source from the web, bookstores or our resource pool to fulfill the child's literacy requirements, based on his psychological report or as requested by parents. There's this big opportunity to discover what's best for the child on his terms."

"Carry out local online Specialist tutoring for students who cannot do face to face in class tutoring /need additional support."

"It would be useful if DAS International can provide Science help to the students. I have noticed that our dyslexic students struggle with that subject a lot. It gets really complicated to write the tedious details of a Science experiment or find the logical answers as the syllabus get more and more complex."

"Yes. Just as we work with other professional therapists in the client's life, it will be good for our own DAS Psychologists to inform us, when an assessment is done after the child joins us. Or have some sort of alert maybe via Tigernix so that we are kept in the loop of updates."

8. What about Specialist Tutoring or DAS International Services are you disappointed with or could improve upon?

Sample responses on open ended questions by Specialist Teachers:

"Constant increase in price which make it inaccessible to students without dyslexia who still needs our help."

I" would like to have further training on how to use assistive technology e.g., iPads/smartboards to help make lessons more interesting and accessible to students."

"Whilst I appreciate that every ST is unique and needs to have their lessons specifically tailored, I would like to have a resource bank of tried and tested material and resources that can be accessed and adapted for use with ST students at varying levels."

CONCLUSIONS

The response rates from these surveys are not high but in line with data from other surveys internationally, but there were very few negative responses or comments. It is therefore, extremely unlikely there were many dissatisfied parents.

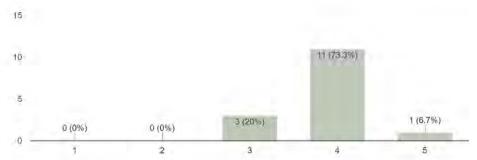
All feedback is important and taken seriously, to improve the level of service to our DAI Specialist tutoring clients.

SPECIALIST / SENIOR SPECIALIST TEACHER FEEDBACK

Specialist/ Senior teachers views were also sought. In total we had 15 Senior and Specialist teachers who taught for the period. We had asked them similar questions which we asked parents. This was in order to compare the results.

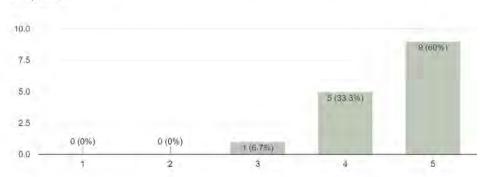
1. How do you feel about your student's progress on Specialist Tutoring this year?

15 responses



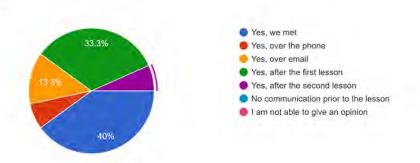
2. How do you feel about contacting parents prior to the commencement of Specialist Tutoring classes?

15 responses



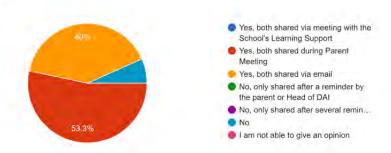
3. Did you have a discussion with the Parents about your student's Individual Education Plan (IEP) prior to commencing

15 responses



5. Do you share your students IEP and Progress Report documents with the parents?





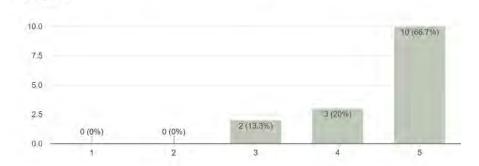
"I preferred to observe my student before planning an IEP. That gave me a good perspective to discuss with the parent."

Please record any special circumstances or reasons for your student's progress or lack of progress which are important to note this year,

"Fortunately, all my students showed and upward curve of progress. I feel it was because of the strategy to work in tandem on dyslexia and school curriculum. It reflected on their performance. However, there were phases when my high school student skipped a few sessions due to her football training and it brought down her performance a little. It was a wakeup call and I used certain strategies and frequent lessons to cover up the syllabus. It worked!"

"Student's progress mostly due to - Student, Teacher and Parent consistently working hand-in-hand together eg. My student KM - obtained A at Maths PSLE 2019."

7. Do you feel the parent listens to your feedback on their child? 15 responses



What about Specialist Tutoring or DAS International Services are you particularly pleased with?

"The flexibility to work on the areas that need support, the opportunity to link school learning and remediation, the support given by the entire organisation creating a very healthy knowledge and experience sharing team."

"1-on-1 tutoring - helps address the learning needs of the kids."

"ST services are great as I can work with a student on a one-on-one basis and have a free hand to create/use/combine resources that I can source from the web, bookstores or our resource pool to fulfill the child's literacy requirements, based on his psychological report or as requested by parents. There's this big opportunity to discover what's best for the child on his terms."

ENGAGING WITH SCHOOLS

From An International School in Singapore

To: Anaberta Oehlers-Jaen & Ms Veena Jayanth (Specialist Teacher)

Mon, Sep 3, 2018, 2:26 PM

Hi Everyone,

I would also like to take this opportunity to thank parent N for organising with Anaberta and Veena and to come out to our school. It was a very fruitful meeting in discussing L's needs and our plans for the upcoming year.

I have added Ms A (Maths), Mrs P (reading) and Ms B (G1-3 curriculum leader) in on this email thread.

Thank you once again.

Kind regards,
Deputy Principal, Elementary School
Of an International School

In-reply

Dear DP,

It was a real pleasure meeting you and your team. We look forward to the Awareness talk scheduled by the DAS for your teachers

Best Wishes

Anaberta

From Specialist Teacher Ms Veena to the International School

Tue, Oct 9, 2018, 7:57 AM

Dear Ms. T

Thank you for meeting Anaberta and myself yesterday. The meeting helped us understand the classroom expectations for K. It gave us an idea about the immediate goals to work upon in our support. Thank you for sharing the homework grid which will help us prepare lessons that would connect his tasks at DAS to his school work.

I will be preparing an IEP based on the points we discussed and will share it with you as soon as it is ready.

Thank you once again for taking the time and wishing you a good midterm break. With best regards,

Veena Jayanth Senior Specialist Teacher

PARENT TESTIMONIALS

For Ana and Veena

Ana and Veena have been a great support to myself and B. They have kept an open communication going with B's school teachers, which has helped to ensure we are all on the same page.

From Parent Ms S

For Specialist Teacher, Veena.

I would say the experience and talent of Ms Veena to be able to motivate the child to read and sustain attention and focus after a long day at school. She is wonderful. I am very happy with the quick response to initiate classes. Ms Veena has been extremely interested to know my child and has helped my child alot. She is patient, knowledgeable interested in the child, sharp to know what methods of teaching work, how to get the best effort out of the child. She is excellent.

From Mrs A

Hi Anaberta,

I would like to take this opportunity to express my gratitude to DAS and Gladys. Gladys has done a tremendous job!

Please find attached my letter of recommendation.

Thanks and have a wonderful holiday break!

Regards, A

From a Parent to DAS International Mon, Oct 1, 2018, 7:21 AM

Dear All

Our heartfelt thanks to each of you for your dedication and commitment towards supporting P. The progress P has made over the last six months is significant and is the result of your teamwork.

Thank you, Mr H, for the attached notes which are very helpful. We will start using numbers strategy at home and will encourage P to practice reading two lines at a time. We bought this weekend a Chromebook for her birthday, so she can start practicing at home and further develop her ICT skills. We will be coordinating with the school in this respect.

Again thank you to all of you, we leave each of these IEP reviews much inspired.

Kind regards

J and T

From a Parent to: Anaberta Oehlers, Head of DAS International and Mr Gopal, Centre Manager of DAS Chinatown Point

Dear Sir/Madam,

My son was helped and taught at DAS for a period of almost two years and was fortunate enough to have Miss Gladys as his teacher. We were recommended DAS at Chinatown as my son was having problems pronouncing certain words and as a result it was effecting his spelling at school.

Miss Gladys over the course of his time at DAS considerably helped our son. She formed a great relationship with him over his time there. When we decided that she had helped him overcome his difficultly and finished his courses and we stopped the lessons and he was very sad as were we.

We highly recommend Miss Gladys.

Best regards

Mr and Mrs R

Parent Bouquet for Specialist Teacher, Veena

Tue, May 8, 2018, 5:36 PM

Hi Ana,

I want to comment on Veena's work with J. Previously, all efforts to teach J to read have been unsuccessful but with Veena's help he has made the leap to putting sounds together and to start reading. He enjoys coming to see her and she positively encourages his hard work. As his parent, I am looking forward to his continued progress in Reading.

Thanks N T

In reply: Tue, May 8, 2018, 9:25 PM

Dear NT,

Thank you very much for your mail. It has been an absolute pleasure to work with J. He is so delightful and is always willing to put in his best effort. Thank you for

giving me the opportunity to be a part of his learning. Wishing him the very best as he moves from strength to strength.

Have a good night, with best regards, Veena

Parent Bouquets for Specialist Teacher, Gladys

To whom it may concern,

Teacher Gladys Wee-Bourne has been working with L for the past 2 years. We have seen tremendous progression in his literacy skills as she prepared him for P1 entry in 2018.

He has also emerged to be more confident and outspoken. She has been very patient working with M who is prone to tantrums and has instilled in him a more methodical and disciplined approach in how he tackles each piece of work. I want to thank Gladys for her great patience & support she has provided to M. She has built a bond and rapport with M. Under her tutelage, he has moved from not being able to read & write to now being able to attempt simple worksheets & read simple books! His self-confidence has also improved loads. She has also given me many tips on how to support M at home.

We truly appreciate her dedication and effort in working with M.

Yours sincerely,

JJ (Mother of M)

From Parent to Anaberta Oehlers-Jaen (Head of DAS International)

Dear Sir/madam

My son, W S, was tutored by Gladys Wee Kim Geok for two terms. We thank Gladys for her professionalism. Her firm, authoritative but patient manner as a teacher has helped J gain confidence in English. We wish her the very best in all her endeavours.

Best regards

LT

Bouquets for Senior Educational Therapist and Senior Specialist Teacher, Bhavani

From Student: H

I was only officially diagnosed with dyslexia when I was secondary 4. This means that I take a longer time to understand and learn a concept. Plus my carelessness and my complacency during my exams also lead to me not doing well in my studies and causing me to lose hope especially my favourite subject, science. However when I was promoted to secondary 4 I knew I had to do better so that I will have more paths to go for my tertiary education.

With the help of my teachers and my DAS teacher, Teacher Bhavani. Teacher Bhavani taught me how to annotate the questions properly which although mainly used in English comprehension but I found it to be useful in all of my subjects. She also taught me to read the questions first then the passage so that I can look out for the answers while reading. This really helped to prevent my carelessness. I am really thankful for her!

Overall for me trying your best and consistently working both hard and smart, applying what you learnt for study skills helps. It is a long but rewarding journey with some failures along the way and one should not give up.

Bhavani's write up on H

My student H attended Specialist Tutoring for 4 months at DAS Rex house learning centre. H was a Secondary Four student at A Secondary School (Express Stream). She was referred to Specialist Tutoring as she had weakness in composition writing, lack of understanding in phonological decoding, passage-reading accuracy and reading comprehension.

H is a pleasant and polite student who always appears calm during my lessons. Although H able to engage in daily conversations, she found it challenging at times to express her thoughts during during oral conversations. She would constantly mention about how difficult it is to get the word out and prefers to write her thoughts instead. H and I had a good chats over her verbal outbursts in school when she was stressed at school. We had good conversations on how to control one's emotions and how failures can be learning experiences.

I incorporated spelling drills, oral conversations based on selected topics, essay writing (expositive) and reading comprehension passages in the sessions. We did many reading comprehension passages and had lots of verbal conversations surrounding the topic to prepare her for the upcoming O level Oral Paper. H is a

hardworking and self-disciplined student. She would read the topics ahead of the session to ensure she had relevant knowledge. H shared her interest in pursuing Zoology and was always an independent learner.

H attained a B3 for her O level English when initially she used to obtain C6. I am heartened to see that H's efforts paid off and she did very well her for O level exams.

Good Job H!

Bouquets from Parents to Senior Educational Therapist and Senior Specialist Teacher, Nicole

The classes are fantastic, and my kids have enjoyed them.

Many thanks :) Happy New Year!

From Parent CB

Bouquets from Parent to Samunn—Senior Educational Therapist and Senior Specialist Teacher

Dear Samunn,

We are very grateful for your help for B she has progressed surpassing our expectation and her own.

Parent W

SPECIALIST TUTORING TEACHER REFLECTION ON THEIR STUDENT

BHAVANI'S STUDENT: Marcus Tan Chun Hon

Marcus Tan Chun Hon attended Specialist Tutoring for 1.5 years at DAS Rex house learning centre. Marcus was a Secondary Three student at St. Andrews Secondary School (Express Stream). He was referred to Specialist Tutoring as he had weak sentence-writing, lack of understanding in phonological decoding, passage-reading fluency and reading comprehension.

Marcus is a well-mannered boy who showed good levels of attention and perseverance throughout the sessions I had with him. He was able to relay his ideas in a fluent and coherent manner. My sessions with him included spelling drills, oral conversations based on selected topics, essay writing (narrative and expositive) and reading comprehension passages. Passages for reading comprehension were carefully selected for his ability.

He always left my session with a simple task to finish before he attends the next session, mainly topics that would be covered in the next reading comprehension task. We usually commence the sessions with conversational topics relating to the reading comprehension passage. Marcus enjoys researching and reading on the topics given as it enhances his general knowledge. At times, we also covered study skill concepts as he had challenges on time management, organisation and note-taking.

However, he would come for my sessions displaying some stress with school work and expectations. He would get angry with himself if he does not attain his own academic targets that he has set for himself. Overtime, we had lots of positive discussions on how we can manage emotions in a much effective manner. Marcus gradually improved in Secondary 4. He started to answer questions pertaining to reading comprehension passages he read independently and most importantly with greater confidence. Marcus started developing better spelling skills and made lesser spelling errors in his writing tasks. It is highly commendable that Marcus attained good conversational skills within the period he was with me.

We always had great discussions on a positive learning and how one can achieve by being positive. Marcus texted me when he was in the school hall when he was about to receive his "O level results".

We had funny moments of laughter wondering how he had actually scored as he mentioned he was having a "heart attack". Marcus did extremely well for his O levels by achieving 7 points.

I remember Marcus texting me "I worked so hard for this and it was really hard". Marcus is a self-motivated teenager who set out goals for himself. The road to success comes through hardwork, determination and sacrifice. I am truly proud of Marcus.

BHAVANI'S STUDENT: Gretal Seet

I was only officially diagnosed with dyslexia when I was secondary 4. This means that I take a longer time to understand and learn a concept. Plus my carelessness and my complacency during my exams also lead to me not doing well in my studies and causing me to lose hope especially my favourite subject, science. However when I was promoted to secondary 4 I knew I had to do better so that I will have more paths to go for my tertiary education. With the help of my teachers and my DAS teacher, Teacher Bhavani. Teacher Bhavani taught me how to annotate the questions properly which although mainly used in English comprehension but I found it to be useful in all of my subjects. She also taught me to read the questions first then the passage so that I can look out for the answers while reading. This really helped to prevent my carelessness. I am really thankful for her! Overall for me trying your best and consistently working both hard and smart, applying what you learnt for study skills helps. It is a long but rewarding journey with some failures along the way and one should not give up.

Bhavani's Reflection on Gretal

Gretal Seet Jia Xuan attended Specialist Tutoring for 4 months at DAS Rex house learning centre. Gretal was a Secondary Four student at Admiralty Secondary School (Express Stream). She was referred to Specialist Tutoring as she had weakness in composition writing, lack of understanding in phonological decoding, passage-reading accuracy and reading comprehension.

Gretal is a pleasant and polite student who always appears calm during my lessons. Although Gretal was able to engage in daily conversations, she found it challenging at times to express her thoughts during during oral conversations. She would constantly mention about how difficult it is to get the word out and prefers to write her thoughts instead. Gretal and I had a good chats over her verbal outbursts in school when she was stressed at school. We had good conversations on how to control one's emotions and how failures can be learning experiences.

I incorporated spelling drills, oral conversations based on selected topics, essay writing (expositive) and reading comprehension passages in the sessions. We did many reading comprehension passages and had lots of verbal conversations

surrounding the topic to prepare her for the upcoming O level Oral Paper. Gretal is a hardworking and self-disciplined student. She would read the topics ahead of the session to ensure she had relevant knowledge. Gretal shared her interest in pursuing Zoology and was always an independent learner.

Gretal attained a B3 for her O level English when initially she used to obtain C6. I am heartened to see that Gretal's efforts paid off and she did very well her for O level exams. Good Job Gretal!

Head of DAS International Anaberta Oehlers spoke with Gretal's mum Sherinna:

Mum's story:

I had a telephone conversation with her mother Shenna and she mentioned the following support which she felt contributed to Gretal's success:

DAS has helped Gretal to have her firstly assessed, confirming the diagnosis of Dyslexia. The recommendation for extra time which was granted meant that Greta could complete the exam papers and could therefore demonstrate her knowledge for the O Level examination 2017. Her Specialist Tutoring classes with Ms Bhavani helped Gretal gave her much confidence and strategies in tackling the English Paper. Overall the smooth flow and quick response and recommendations for Gretal was much appreciated by Gretal's mum Shenna.



BHAVANI JEGANATHAN

Senior Educational Therapist and Specialist Teacher

Bhavani has more than a decade of practical experience in the field of Specific Learning Differences, especially Dyslexia. She is a Fellow with the Register of Educational Therapists (Asia) and is a qualified trainer with a WSQ Advanced Certificate in Training and Assessment (ACTA). She has extensive experience and has held the role of a senior educational therapist, programme manager and curriculum manager at DAS. She is also a qualified trainer with the Advanced Certificate in Training and Assessment (ACTA) by the Singapore Workforce Skills Qualification (WSQ). Her postgraduate academic achievements include a Masters in Education and a Postgraduate Certificate in Learning and Teaching in Higher Education, London Metropolitan University, UK. She believes that teaching can impact students and one of the greatest joy is to help them to succeed.

ABOUT THE AUTHOR



ANABERTA OEHLERS-JAEN

Head of DAS International and Programme Director for On-site School Based Programmes

Ms Anaberta Oehlers-Jaen started her career at DAS in 2005 as an Educational Therapist and has since held various portfolios. For 4 years, she was the Preschool Manager of the DAS Preschool Service and was actively involved with children at risk of literacy delay and helped to launch the service at the DAS. She assumed the position of Head of DAS International in 2011 in order to support both the local and expatriate international community of students, who may be experiencing learning differences through Specialist tutoring and Assessments. In her role as Maths Programme Director in 2014, Anaberta has presented at International conferences delivered in Singapore, ASEAN region and the UK.

She is also actively involved in research and has published articles in the Asia Pacific Journal of Developmental Differences. She holds a Masters Degree in Special Needs from NTU, BA(English Language and Literature) from SUSS, a Postgraduate Certificate in Teaching and Learning in Higher Education from the London Metropolitan University as well as a Cambridge International Diploma for Teachers and Trainers (Dyslexia), along with Early Childhood Diplomas. She is also a qualified trainer with the Advanced Certificate in Training and Assessment (ACTA) by the Singapore Workforce Skills Qualification (WSQ). She has Fellow status at RETA, Register of Educational Therapists (Asia), and is also a Senior Educational Therapist. Delivering a professional service to the families of students with Specific Learning Differences is high on her priority and hopes to continue to serve this community both in Singapore and the region.



DAS INTERNATIONAL SERVICES—SPECIALIST TUTORING

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DAS IS A ONE-STOP CENTRE PROVIDING SUPPORT FOR YOU AND YOUR CHILD WHILE IN SINGAPORE.

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Led by a multi-disciplinary team that has extensive experience in providing direct support to people with specific learning differences (SpLD), the lecturers are able to use their skills and expertise in the design and delivery of the programmes offered by the DAS Academy. These programmes provide an academic pathway in the field of SpLD from foundation to postgraduate levels.

Having established a good professional standing in the field of SpLD, Das Academy works in collaboration with the government, educational and professional bodies to empower individuals who wish to make a difference in the lives of people with SpLD.

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- √ Specialist Diploma
- √ Masters

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CPE Registration No.: 201003689Z | Validity: 30 December 2013 - 29 December 2017
DAS Academy Ltd: 73 Bukit Timah Road, #05-01 Rex House, Singapore 229832
T 6336 2555 | F 6643 9643 | www.dasacademy.edu.sg

Professional Development by DAS Academy

June Siew
Head of DAS Academy

Formerly the training arm of the Dyslexia Association of Singapore (DAS), DAS Academy is now a Private Education Institution (PEI) registered with the Council for Private Education (CPE) since 2010. As Singapore began to respond to the vision of an inclusive society in 2004, the desire to create an inclusive learning environment in schools grew, and the demand for special needs training subsequently followed. We responded by increasing the repertoire and depth of special needs courses we offered. This move necessitated our registration with the CPE. DAS Academy currently specialises in training for teachers and professionals and empowers them to support children with specific learning differences (SpLD). The DAS Academy's courses provide a multi-disciplinary perspective of SpLDs, tapping into the perspectives and experiences of educational therapists, psychologists and speech therapists at the DAS. DAS Academy also draws on DAS' 25 years of rich heritage of providing specialist dyslexia assessments and intervention to provide adult learners with an applied learning experience.

DAS Academy operates in this niche market. DAS Academy is a key training provider for SpLD training in mainstream, international and special schools. Currently, the DAS Academy offers a wide range of courses. Practical workshops and certificates provide quick strategies, specialist diplomas provide a comprehensive blend of theory and practice and academic postgraduate masters aim to transform seasoned practitioners into domain experts. For 12 years, the DAS Academy has been tasked by the Ministry of Education to deliver the Diploma in Special Education (Dyslexia) to their Allied Educators.

"DAS Academy operates in this niche but captive market. DAS Academy is a key training provider for SpLD training in mainstream, international and special schools."

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Delivered in Block Delivery
Each module is taught in block
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- Our practitioner-faculty, ensures that skills and theories taught to students are current and have been tested in real-world situations in the field of Special Educational Needs.
- 3 Evidence-based SEN Practices
 High quality evidence-based SEN
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 West provide an effective
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Use the benefit of your working experience to apply.

- Five years of relevant work experience
- A min C6 pass in English or
- Ability to demonstrate a level of at least IELTS 6.5 (taken within the last two years).





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1. Four taught modules and dissertation (60 credits) or 2. Five taught modules and dissertation (30 credits)

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Masters of Arts in Special Educational Needs / Additional Learning Needs

Programme Structure

The MA SEN/ALN is a 180-credit programme which allows students to choose their study pathway. Students can take either of these pathways:

- Study four taught modules (30 credits each) followed by a dissertation module (60 credits)
- Study five taught modules (30 credits each) followed by a dissertation module (30 credits)

Modules

ED4U034 (30 Credits) - 45 Hours

Working With Dyslexia: Linking Theory, Assessment, and Practice

ED4U032 (30 Credits) - 30 Hours SEN/ALN: Contexts and Concepts

ED4U027 (30 Credits) - 30 Hours Dyslexia: Theory and Assessment

ED4U019 (30 Credits) - 30 Hours Managing and Supporting CAMH and SEBD

ED4U009 (30 Credits) - 30 Hours Research Methodology

ED4U008 (30 Credits) or ED4T002 (60 Credits) - 2 Induction Days Dissertation

Entry Requirement

- A Bachelor's Degree in any field from a recognised University
- A minimum of C6 pass in English as First Language at 'O' Level; or
- Ability to demonstrate a level of at least IELTS 6.5 (taken within the last two years).

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The Masters of Arts in Special Educational Needs (MA SEN), offered by DAS Academy, in collaboration with the University of South Wales is a platform for seasoned educators to develop themselves as domain experts in this sector. Individual Programmes

MASTER OF ARTS IN SPECIAL EDUCATIONAL NEEDS/ ADDITIONAL LEARNING NEEDS (MA SEN/ALN)

The Master of Arts in Special Educational Needs/ Additional Learning Needs (MA SEN/ALN) takes on a block delivery format and has been designed to provide for the continuous professional, academic and personal development of participants who are drawn from a range of backgrounds which are related to the field of Education. Course participants include teachers and leaders in schools, allied educators and parents and caregivers who work with children with a range of special educational needs (SEN).

Having its foundation in the professional and established SEN framework from the University of South Wales, the MA SEN/ALN programme in Singapore is further supplemented with local perspectives and practices to ensure its relevance for the local context. This is a programme that brings together high quality evidence-based SEN practices from the East and the West.

The programme provides access to a coherent framework of professional development in the area of SEN and encourages the effective synthesis of theoretical and practical knowledge. The intellectually rigorous context allows practitioners to progress to the next level of professional development by developing their skills of communication, analysis and research in the field of SEN at Master's level.

SPECIALIST DIPLOMA IN SPECIFIC LEARNING DIFFERENCES

The Specialist Diploma in Specific Learning Differences (SpLD) is a part-time course designed by the DAS Academy to meet the increasing demands for higher education in the field of specific learning differences. Offering a platform that promotes interactive and collaborative learning, this Specialist Diploma will engage students in the learning process as they explore, reflect and share knowledge and experiences as an individual and as a group.

For the award of the Specialist Diploma in SpLD, students have to successfully complete six modules which includes a 10-hour Teaching Practicum with a struggling



learner whom they have chosen to support. The Specialist Diploma in Specific Learning Differences programme is a part-time course and will take up to three years to complete.

SPECIALIST DIPLOMA IN EDUCATIONAL THERAPY

The Specialist Diploma in Educational Therapy is designed as a part-time specialist qualification to empower educational therapists at the DAS to effectively support students receiving intervention at the DAS learning centres. Its aim is to quip DAS educational therapists with the theoretical knowledge and practical skills to build the literacy skills needed by dyslexic students as they journey from primary to secondary school. This part-time specialised training is conducted over three modules. Modules are designed to run consecutively and will complete in 9 months.

DIPLOMA IN SPECIAL EDUCATION (DYSLEXIA STUDIES)

The Diploma in Special Education (Dyslexia Studies) is designed as a part-time specialist qualification to allow Allied Educators in the Singapore Ministry of Education schools to gather theoretical knowledge on dyslexia (and other common types of learning differences likely to be presented with it) as well as practical skills to support learners in this field. The specialist diploma aims to empower allied educators to exhibit professional responses and take practical steps to ensure that mainstream students with learning difficulties enjoy equal access to the broader curriculum, just like their typically developing peers. Allied educators undertaking this programme will have to complete three modules for the Diploma in Special Education (Dyslexia Studies) award. Modules are designed to run consecutively and will complete in 9 months.

CERTIFICATES

DAS Academy currently offers 12 certificates on various topics. They are suitable for parents and educators who wish to deepen their SEN knowledge and broaden their practical teaching skills.

WORKSHOPS

DAS Academy currently offers 13 workshops on various topics. They are suitable for parents and educators who would like to equip themselves with basic Special Educational Needs (SEN) knowledge and practical teaching tips.



FUNDING

Through support from funding bodies, DAS Academy strives to make our courses more accessible to community partners and stakeholders who will benefit from SpLD training. With course objectives and outcomes aligned to the core competency roadmap outlined by Social Services Institute (SSI), six of our certificate courses have received support for funding. The remaining six certificate courses are eligible for Skillsfuture Credit use. Voluntary Welfare Organisations (VWOs) can benefit from our training by tapping on the VWO-Charities Capability Fund (VCF). This will enhance partnership between VWOs and create a collaborative approach towards caregiving. Additionally, the Caregivers Training Grant (CTG) administered by the Agency of Integrated Care (AIC) has made our parent workshops more attainable for caregivers who need to build capabilities to better support their children with SpLD at home.

QUALITY ASSURANCE

The programmes at the DAS Academy are registered with the CPE and come under the purview of four panellists in the Academic and Examination Board. The Academic Board and Examination Board convene three times a year to ensure adherence to high quality training services. Issues pertaining to these are raised during the meetings:

- Approval of new modules introduced
- Confirmation of provisional grades of existing modules
- Evaluation of existing modules
- Teaching and learning practices

In addition, as a partner institution of the USW, the DAS Academy follows the delivery systems and processes at USW, with reference to Chapter B10 of the UK Quality Code: Managing Higher Education Provision with Others. USW's systems and processes to protect academic integrity are in line with the QAA UK Quality Code for Higher Education, http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/quality-code-part-b

The University is also subject to periodic review by the Quality Assurance Agency, the most recent review being in 2015, which the DAS Academy has participated in. The outcome of the review is that the panel is fully satisfied with the quality of partnership.

Every postgraduate course DAS Academy offers is subject to Annual Monitoring, the purpose of which is to: evaluate and improve course quality; ensure the best

possible student experience with the resource available; identify and disseminate good practice; build up information needed for the course review process and for external reviews and audits; encourage reflective practice among module and course tutors; ensure appropriate action is taken to remedy any shortcomings and enhance provision. Clear mention has to be made in course monitoring reports of any partner institution where the course is also delivered.

The Quality Assurance Committee in USW receives reports on the outcomes of the external examining system and of annual course monitoring.

DISCLOSURE OF OUTCOMES

PROGRAMMES	ATTENDANCE
MA SEN level modules	80
Diploma level modules	112
Certificate level modules	233
Workshops	323
Total	748



DAS ACADEMY

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DAS ACADEMY KEY STAFF



JUNE SIEW-Head of DAS Academy

June Siew has more than a decade of practical experience in the field of Specific Learning Differences. She is a Fellow with the Register of Educational Therapists (Asia) and is a qualified trainer with a WSQ Advanced Certificate in Training and Assessment (ACTA). Her previous experiences as an educational therapist augments her current role as a lecturer. She has written a paper on "Educational Therapy in Singapore: Towards Professionalisation and Professionalism" which has been published in the Asia Pacific Journal of Developmental Differences.

Her postgraduate academic achievements include a Master of Arts in Specific Learning Differences and a Post Graduate Certificate in Learning and Teaching in Higher Education, London Metropolitan University, UK. She is currently pursuing a Doctor of Education programme at the National Institute of Education (NIE), Singapore and the University College London, Institute of Education (IoE) with a special interest in cool and hot executive function in children with reading difficulties.

Highest Qualification:

Master of Arts (Specific Learning Differences), London Metropolitan University, UK

Teaching / Training Qualification:

PGCert in Learning & Teaching in Higher Education, London Metropolitan University, UK Advanced Certificate in Training and Assessment (ACTA)



PRISCILLIA SHEN Assistant Head of DAS Academy

Priscillia Shen began her special education journey as an Educational Therapist at DAS and has more than 10 years of experience in the field of special educational needs, especially in dyslexia. Her previous experience working closely with SpLD learners has allowed her to take on a constructive and practical pedagogical approach. She believes in keeping up with current developments in the field to continually refine teaching practices and maintain professional passion. She is also a qualified trainer with the Advanced Certificate in Training and Assessment (ACTA) by the Singapore Workforce Skills Qualification (WSQ). While lecturing at the DAS Academy, she is currently pursuing Doctorate in Education (EdD) at the National Institute of Education (NIE) in Singapore and the Institute of Education (IOE) in UK, London.

Her research interests are in dyslexia, Chinese language and Mathematics. She has been co-presenting papers on learning difficulties in Chinese language and Mathematics in relation to dyslexia at conferences since 2012.

Highest Qualification:

Master of Arts (Specific Learning Differences), London Metropolitan University, UK

Teaching / Training Qualification:

PGCert in Learning & Teaching in Higher Education, London Metropolitan University, UK Advanced Certificate in Training and Assessment (ACTA).

DAS ACADEMY KEY STAFF



SYLVIA FOO Senior Lecturer

Sylvia Foo has two decades of experience as a dyslexia, literacy and English Language specialist in both private and public educational institutes including the Dyslexia Association of Singapore. She was a Senior Lecturer in the early years of the training arm of the DAS. Sylvia holds a Masters of Arts (English Language) and a Diploma in Education (NIE). She is also trained in the Orton-Gillingham and Hornsby approaches to dyslexia remediation, and is a qualified trainer with a WSQ Advanced Certificate in Training and Assessment. Besides her track record as an educational therapist, Sylvia has successfully led and restructured a literacy intervention centre for learning needs students. Since 2009, she has also trained and mentored teachers in the early childhood industry to support their professional skills development. Sylvia is very interested in designing and delivering training programmes that enhance best practices in educational therapy.

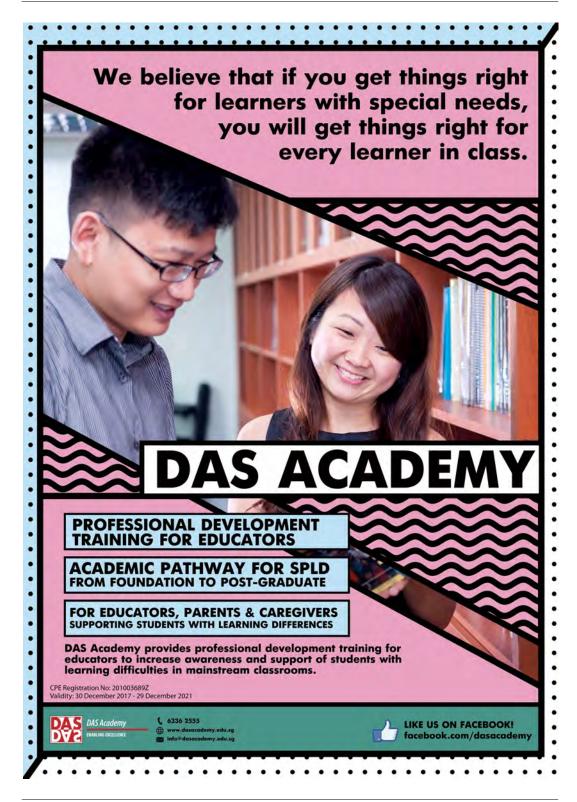
Highest Qualification:

Masters of Arts (English Language), National University of Singapore, Singapore

Teaching/Training Qualification:

Diploma in Education, National Institute of Education, Singapore

Advanced Certificate in Training and Assessment (ACTA)



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Deborah Hewe

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EMBRACE DYSLEXIA



Embrace Dyslexia Commitment

Embrace Dyslexia intends to raise awareness of dyslexia in the Singaporean community with an aim to have as many people understand both the strengths and challenges that individuals with dyslexia face everyday.



Raise awareness for Embrace Dyslexia by:

- Sharing information about dyslexia in your workplace
- Inviting DAS to conduct Awareness Talks
- Including information about dyslexia in the staff handbook



Explore opportunities to work with DAS - Workplace Giving or Volunteering Initiatives

- Mentoring DAS Alumni for internships or work experience



Champion dyslexic individuals

- Recognising their strengths and understand their weaknesses
- Providing appropriate support and encouragement



Donate to DAS Programmes

- Support low-income families by giving to the Bursary Fund



Advocate for Embrace Dyslexia

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The Dyslexia Association of Singapore (DAS) is a vibrant organisation serving the specialised educational needs of over 2,900 students with learning differences. DAS has over 240 professional staff offering a wide array of services and operates 13 learning centres across Singapore.

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Early Intervention for Dyslexia in Singapore

Teo Jee Ti, Mya The Pwint, Priya Trigunayat, Yin Shiqi, Lim Yong Yin, Chow Rui Ping Dexter and Edward Phua Zheng Yi

Singapore Management University

ABSTRACT

In this article, the authors address the issue of current levels of early intervention for dyslexia in Singapore. Following interviews with DAS and a dyslexic counsellor, a survey of 67 parents and teachers was undertaken to evaluate understanding of dyslexia in this group. Results suggested that concerns about stigma, and the potential complexity and cost of diagnosis and support are seen as key in reducing numbers coming forward, A range of suggestions for increasing visibility and for mobile apps to facilitate screening are proposed.

Keywords: early intervention, awareness, benefits, technology

INTRODUCTION

Dyslexia is a learning disability that affects one's ability to master basic literacy skills. These skills include the knowledge of the letters of the alphabet, phonograms, as well as reading and spelling abilities (Wong & Sathiasilan, 2018). KPMG – a multinational professional service network and one of the big four accounting organizations that has a foundation committed to bring about change in business and society - wrote a report on dyslexia. The report, the lack of early intervention in dyslexia could impede a child's ability to master basic literacy skills, potentially costing Singapore an estimated sum of \$\$8,800 to \$\$112,000 per dyslexic individual, over a lifetime (KPMG Foundation, 2006).

The term "early intervention" in this report refers to appropriate measures taken prior to the diagnosis of dyslexia and after the diagnosis of dyslexia in young children between the ages of 4 to 8. Children above the age of 4 were targeted

because research has indicated that it is possible to identify pre-school children who are at risk of dyslexia (See & Koay, 2014).

In this article, children under the age of 8 have also been targeted. This is because research has shown that if dyslexia is identified before the age of 7, with effective teaching, individuals with dyslexia can improve to the point where they have little disadvantage as compared to their peers. After 9 years old, the effects of intervention will be significantly reduced (Wong, 2015). Therefore, it was decided to include children up to the age of 8, where most children should have mastered the necessary basic literacy skills (Bernhardt & Major, 2005), just before the effectiveness of early intervention drops significantly.

The failure to master these basic literacy skills could result in hefty, unnecessary costs to society. These costs include educational, employment, social and health costs and the cost of crime. These could potentially amount to a sum of \$\$8,800 to \$\$112,000 per dyslexic individual over a lifetime (KPMG Foundation, 2006).

The research question addressed in this study, is how to increase the rate of early intervention amongst dyslexic children between the ages of 4 and 8

LITERATURE REVIEW

What is Dyslexia?

According to the Dyslexia Association of Singapore (DAS), dyslexia is a specific difficulty in mastering basic literacy skills such as reading, writing and spelling. Dyslexia is observed in individuals with weaknesses in language development, memory and sequencing (DAS, n.d.).

Dyslexia is not a disease, however, it is a condition that cannot be prevented or cured. Identifying dyslexia and receiving specialist teaching early is critical in mitigating the detrimental effects of dyslexia (DAS, n.d.).

Signs and Symptoms

During a child's growing years, it is normal for children to reverse the letters of the alphabet in their writing - for example, mistaking 'b' for 'd', 'p' for 'q', and vice versa. Therefore, parents and teachers might not see the need for an assessment for dyslexia if the child is able to read, but faces issues with writing. By the time dyslexia is detected, there might be an aggravation of the child's learning difficulty (DAS, n.d.).

In addition to difficulties in reading, writing and spelling, a child with dyslexia may experience challenges in verbal and written memory, speech, speed of understanding and grasping mathematical concepts. The child may also prefer to communicate with gestures rather than speaking (DAS, n.d.).

Prevalence of Dyslexia in Singapore

According to Dyslexia International, an estimated 10% of any given population has dyslexia (Dyslexia International, n.d.). This figure applies to the Singapore population as well and is confirmed by DAS (Chan, 2016).

Recently, there was a rise in the number of children diagnosed with dyslexia. In 2013, DAS's "School Age Assessment Outcome" diagnosed 68 children with dyslexia while in 2017, that number rose to 113 (DAS, n.d.). This can be attributed to an increased awareness of the condition and improved screening methods available compared to a decade ago (Salinger, 2016).

Identifying and Diagnosing Dyslexia

It is important to note that screening programmes do not lead to a diagnosis immediately. Diagnosis for a child with dyslexia happens over a period of time. A simple reading test might not be able to effectively diagnose a child. Assessment over a period of time is necessary to differentiate the condition of dyslexia from other disorders such as Attention-Deficit/Hyperactivity Disorder (ADHD) or oral language delays (Brock, Davis, & Christo, 2009).

Even after the diagnosis of dyslexia, psychologists need to determine the learner's profile of the child. This will enable educational therapists to select appropriate educational goals that target the child's needs closely. The progress of every student is monitored and reviewed by educational therapists every six months. After three years, psychologists may conduct review assessments to determine the child's overall progress since his previous assessment (DAS, n.d.). This long and complex process required to diagnose dyslexia might deter some from seeking early intervention.

Existing Measures of Early Intervention

Apart from DAS, there are other organisations and private clinics that are able to diagnose children with dyslexia. These organisations include Therapy Alliance and SHINE Children. However, we will mainly consider the activities of DAS in this report since they are the main organisation in Singapore that deals specifically with dyslexia.

This is evident from the wide scope of services available and the fact that it is the only organisation that partners with Ministry of Education (MOE) officially (MOE, n.d.). We will also consider the existing programmes offered by MOE in the mainstream schools.

Programmes by the Ministry of Education (MOE)

There are two main learning support programmes provided by MOE for Primary 1 students. The Learning Support Programme (LSP) is organised for Primary 1 students facing difficulties mastering the English language and literacy skills. For students who are weaker in mathematics, they may enter the Learning Support for Mathematics (LSM) programme (MOE, n.d.).

Although these programmes are not specifically designed for children with dyslexia, at the end of the 2-year LSP, the Primary 2 students who are still struggling with literacy skills are screened for dyslexia. Those who are identified with the learning disability are supported through the School-based Dyslexia Remediation programme in Primary 3 and 4 (Toh, 2018), when they are at the ages of 9 and 10 respectively.

However, this intervention might come too late since the effectiveness of an intervention programme falls significantly after the age of 9 (Wong, 2015).

Programmes by the Dyslexia Association of Singapore

The early intervention measures that DAS offers include screening and literacy programmes.

Firstly, DAS offers free public screening services for children at the primary and preschool level at the various learning centers in Singapore. For pre-school children, the educational therapist will conduct a quick 15-minute early literacy screening, while primary school students will take a short computerised test (LUCID Rapid Dyslexia Screening test) in a fun game format. However, these tests only provide a probability or risk of dyslexia rather than a diagnosis of dyslexia (DAS, n.d.).

Secondly, the Main Literacy Programme (MLP) offered by DAS helps primary and secondary school students with dyslexia specifically in their English literacy skills. The MLP helps students in the 4 main areas of literacy. This includes vocabulary, writing, reading comprehension and reading fluency (DAS, n.d.).

Thirdly, DAS works with the MOE under the MOE-Aided DAS Literacy Programme (MAP). This MOE-subsidised programme aims to help dyslexic children in the "areas of phonics/phonemic awareness, reading, comprehension, spelling and writing". In

2016, this programme provided intervention for over 3000 students. Around 46.7% of all MAP students received the MOE Financial Assistance Scheme (FAS) or DAS bursaries (Ram et al., 2016).

Other Programmes

There are other early intervention programmes at preschools such as Early Intervention Programme for Infants & Children (EIPIC) and Development Support Plus (DS-Plus) (SG Enable, n.d.). These programmes are targeted at children below the age of 6 and they have to be recommended by doctors to be eligible for this programmes. In addition, children who are eligible for this programmes have to be a Singapore Citizen or Permanent Resident.

Limitations of the Existing Measures

While the existing literacy programmes are sufficient and effective, we find that the screening for dyslexia only covers a small proportion of children with literacy development delays.

In its intervention programme annually, DAS screens about 300 children per batch, for children who are at risk of dyslexia. 67% out of these 300 children are eventually diagnosed with dyslexia (Samsudin, 2018). However, based on international statistics, 10% of any given population is likely to have dyslexia, with 4% of the population having dyslexia that is severe enough to warrant intervention (Dyslexia International, n.d.). Based on these statistics, out of an average of 40,000 births in Singapore annually (Department of Statistics Singapore, n.d.), around 1,600 children would have dyslexia that is severe enough to warrant intervention. The 300 children that are screened by DAS are only considered to be the "tip of the iceberg" (Samsudin, 2018). DAS is one of the organizations who does screening. If we take a look at DAS screening of preschoolers, it is suggested that the existing screening programmes are insufficient.

Programmes such as EIPIC and DS-Plus requires children to be recommended by doctors into the programmes which does not help address the issue of a lack of screening.

There are two possible reasons why people choose not to go for these screening programmes. Firstly, many perceive dyslexic individuals as people with lower intellectual capability, with some even associating dyslexia with mental retardation (DAS, n.d.). A study conducted showed that achievement gaps between dyslexic children and normal students appear as early as first grade and persist into adolescence (Ferrer et al, 2013). This difference in academic achievements

contributes to the stigma that dyslexic individuals are less capable.

Therefore, many choose not to go for an assessment for dyslexia because of this stigma. However, dyslexia is simply a difficulty in learning that requires a different form of teaching. Overcoming the barriers of learning will allow them to master the basic literacy skills just as effectively as other students (DAS, n.d.).

Secondly, the process of assessment is complex and time-consuming. Furthermore, 75% of the total cost of treatment for dyslexia goes into diagnostic tests (Roijen, Goettsch, Ekkebus, Gerretsen & Stolk, 2011). Hence, many parents might be deterred by the high costs of treatment and the tedious process that they might choose to delay the diagnosis and treatment of dyslexia.

There is a pertinent need to improve the efficiency of such assessment process and to reduce the costs for diagnosis. This is because the failure to address the issue of dyslexia early will affect the child's ability to master basic literacy skills, leading to a plethora of issues to the individual and the society.

IMPACT OF DYSLEXIA

Emotional Impact

In Singapore, teachers in mainstream schools expect Primary 1 students to possess basic literacy skills such as "reading, copying and writing ability" (Sim, Wong, Samsudin, & Bunn, 2015) once they enter Primary 1. Such expectations might pose tremendous stress for students with dyslexia who experience "developmental delays in literacy" (Sim et al., 2015). This is especially prominent in a competitive society like Singapore where good academic grades are highly desired and sought after. Research has also shown that children with dyslexia are at a higher risk of being lonely and bullied (Hellendoorn & Ruijssenaars, 2000). In a study conducted by Ingesson (2007), 40% of 75 dyslexic subjects admitted that dyslexia had negative impacts on their self-confidence. Having an inferiority complex was found to be the main impact. Dyslexic individuals may feel inferior from being unable to match up to their peers in class. Further, research has shown that dyslexic individuals who were not diagnosed early are more likely to have emotional and social problems as adults (Hellendoorn & Ruijssenaars, 2000).

Moreover, a study conducted by University College London (UCL) on 99 Primary 3 students from 13 local primary schools in Singapore showed that besides facing literacy problems, dyslexic children tend to have higher levels of panic, anxiety and emotional imbalance, and are more prone to display signs of depression (Lee, 2017).

Social Impact

Low self-esteem, social isolation and educational failure often result from undiagnosed dyslexia. It is highly likely that these negative feelings will develop into anti-social behavior, which could lead to deviant or offending behaviours (Kirk & Reid, 2001). In some extreme cases, it could even lead to crimes. For example, a study in eight Yorkshire and Humberside prisons found that dyslexia was three to four times more common amongst prisoners than in the general UK population (Rack, 2005).

Dyslexic individuals with poor literacy skills might also find it difficult to find jobs. The UK Parliament reported that 40% of unemployed adults seeking help from UK government job centres were dyslexic (Walmsley, 2012). This can lead to dyslexic individuals being dependent on their community, increasing the burden on society.

IMPORTANCE OF EARLY INTERVENTION

Early intervention for dyslexia is vital because it can lead to higher literacy gains and economic benefits.

Higher literacy gains

Several studies have shown that the early intervention of dyslexia could lead to better academic performance. Research by Torgesen (2011) has shown that one hour of intervention at the age of 8 led to an increase of between 0.2 to 0.3 standard score improvements. Furthermore, researchers from the University of Pennsylvania and the University of Delaware conducted a study to analyse the effectiveness of Reading Recovery, a programme that helps 1st graders (6- to 7-year-olds) who are struggling with reading, one of the basic literacy skills. The study found that the struggling 1st graders who were enrolled in the programme attained 3.4 points higher in the lowa Test of Basic Skills (ITBS) Reading Total test than their counterparts who did not participate in the programme (May, Sirinides, Gray & Goldsworthy, 2016). From this study, it is evident that early intervention can increase literacy gains as compared to delayed intervention.

Economic Benefits of Early Intervention

Early intervention is a cost-effective solution to the problems that stem from the failure to master basic literacy skills. Investments in early intervention will yield significant savings for society. For example, according to a KPMG Foundation report (2006), approximately £800 million can be saved in employment-related costs in the UK through the "Every Child a Reader" programme. This report further states that the

highest savings from early intervention are from unemployment, followed by the savings in the costs of crime and education.

Additionally, early intervention can also help to save hidden costs which will accumulate in the long run for the family of the dyslexic individual. This includes the costs for counselling, special education services and costs to the family for supporting their unemployment (Noland, 2018).

RESEARCH METHODOLOGY

Primary data was collected by conducting interviews with two experts in the field and a survey for the public. This is to affirm our findings from our secondary data and evaluate how we can improve existing measures to increase the rate of early intervention in Singapore.

Interview with DAS

DAS is the main organisation that provides lessons and screening programmes specifically for children with dyslexia in Singapore. Hence, an interview with DAS will help us understand the prevalence of dyslexia in Singapore and the current measures in place that encourage parents to seek early intervention for their children who are at risk of dyslexia. In addition, as a key player in the treatment of dyslexia, interviewing DAS will enable us to review our solutions, to see if they are feasible

Interview with counsellor

Charlene Wong, aged 28, is a graduate counselor who is about to pursue her doctorate at Princeton University. Charlene had previously counselled children with dyslexia, audited existing programmes and designed new programmes that catered to the needs of dyslexic children in MOE schools. Since Charlene counsels children with learning difficulties, conducting an interview with her will help in gaining a more in-depth understanding about the social and emotional impact on dyslexic children and the reasons why some might be resistant or unaware of the various screening and learning programmes currently available.

Survey

A survey was conducted to ascertain the public's level of awareness of dyslexia. The survey was conducted using stratified and convenience sampling methods. We disseminated the survey specifically to parents with children at the pre-school or primary levels and teachers, who are teaching these levels, via an online survey link.

The aim of the survey is to find out the level of awareness and perception of dyslexia amongst parents and teachers. The survey was split into three different blocks. Each block served a different purpose in understanding the respondents' perception and understanding of dyslexic children.

The first block consists of questions to obtain the demographics - age, gender and educational qualifications - of the respondents, their level of understanding on dyslexia and their opinion on how important it is to seek early intervention. We wanted to see if there is any possible correlation between the different types of demographics and their knowledge and awareness of dyslexia. This will help guide us in our recommended solutions.

The second block consisted of a list of 10 statements, requiring the respondents to determine if the statement is true or false. The aim of these questions is to find out how knowledgeable respondents are about dyslexia.

The third block of questions aimed to find out the respondents' experience with dyslexic individuals. Questions on whether they have had interactions with dyslexic individuals, what the symptoms of dyslexia are and whether there is a stigma attached to dyslexia were posed. This set of questions sought to find out the public's perception of dyslexia and whether there is a difference in the opinion of those who have interacted with dyslexic individuals and those have not.

By assessing our respondents' understanding on dyslexia, it was possible to clarify whether there is a need to raise awareness on dyslexia and whether dyslexia is properly understood. This will then help to draw up suitable recommendations to improve the situation.

RESULTS

Interview with DAS

In our interview with DAS, three main points were raised.

Firstly, it was pointed out that most people do not fully understand what dyslexia is. Most are not aware that dyslexia is genetic and that children with dyslexia require different forms of learning. In some cases, people even associate dyslexia with intellectual disabilities like Down Syndrome. Hence, there is a need to increase the awareness of dyslexia in Singapore.

Secondly, the costs of diagnosis and the treatment of dyslexia were outlined Diagnostic tests are free if they are done with MOE psychologists. However, it can

take up to 6 months before one can consult an MOE psychologist, thus some parents resort to seeing a private psychologist instead, which can be costly. DAS further noted that the cost of treatment is not cheap, but pointed out that there are various financial assistance schemes available for parents, depending on their financial situation.

Thirdly, DAS provided information about the current measures in place for dyslexia. They mentioned that they have various centres in convenient locations including schools and void decks for parents and children to seek help. However, DAS noted that the centres at the void decks tend to be mistaken for tuition centres, hence many are unaware that help for their children is actually conveniently located near their homes. In addition, they have organised roadshows at public places, such as the UOB Plaza and Dhoby Ghaut, to raise awareness on this issue.

Interview with counsellor

In the interview with the counsellor, she identified two main reasons for why there is a low early intervention rate for children with dyslexia in Singapore.

Firstly, she pointed out that many parents are afraid of the stigma attached to dyslexia. They think that this might "leave a mark" on their children and limit their opportunities of entering into the various special programmes at school. Therefore, many parents bring their children to private clinics for diagnosis, since government clinics usually keep their child's medical records. Those who are unable to afford going to a private clinic will choose not to seek intervention. This phenomenon also contributes to a dearth of information on the rate of early intervention in Singapore as such information is only available from public institutions, while many private clinics are unwilling to release their patients' records.

Secondly, the counsellor also affirmed the finding that the costs of treating dyslexia in Singapore is high. This high cost might be one of the reasons why many parents from low income families choose not to seek intervention. However, she also mentioned that there are many subsidy schemes offered by both the government and DAS which many families might not be aware of.

Various issues that children with dyslexia face were highlighted. The counsellor noted from her experience in counselling that many dyslexic children felt pressured to perform beyond their current abilities, limited by learning differences like Dyslexia. This lowered their self-esteem, especially when they underperformed compared to their peers. In some serious cases, this even led to other medical conditions such as Generalised Anxiety Disorder (GAD) and depression. The long-term effect of this could be that their proficiency in literacy skills might be lowered, adversely affecting their employability in the future.

The best way to increase a child's ability to master basic literacy skills is to allow the child to learn at his own pace, through a medium that he is comfortable with. Early intervention can help to reduce the stress and anxiety that a child might potentially face. Enrolling in the various special programmes at an early age will make the learning process much more enjoyable.

SURVEY FINDINGS

Survey Results

The survey gathered 67 responses in total from parents and teachers, aged 18 and above.

In the first block, the respondents were asked to rate their understanding of dyslexia out of 10. With a mean score of 5.1, it was observed that the average respondent thinks that he does not fully understand what dyslexia is. The respondents were also asked to rate the importance of seeking early intervention for dyslexia out of 10. An average score of 7.9 was observed. This showed that although the respondents indicated a relatively low level of understanding of dyslexia, many recognised the importance of seeking early intervention.

In the second block, the respondents were asked to answer 10 True/False statements. One point was given for every accurate answer. With an average score of 6.6, it was observed that there are still misconceptions that exist about dyslexia. In particular, 61.3% of the respondents felt that dyslexia can be outgrown where in actuality (Appendix A), dyslexia is not a lifelong disease, but a learning difficulty that can only be improved with proper intervention (DAS, n.d.). This could suggest that many people might not see the need to seek any form of intervention since they see it as a condition that can resolve on its own. In another question, 51% of the respondents answered that dyslexia is more prominently found in boys than girls (Appendix A). However, there is an equal chance of having dyslexia for both genders (Gentry, 2014).

From the third block, it was observed that the respondents were unfamiliar with some of the symptoms of dyslexia. In particular, more than 45% of the respondents associated poor grades with dyslexia (Appendix B). However, having poor grades is not an indication of dyslexia, although it can be the result of a failure to master basic literacy skills (DAS, n.d.).

From the survey results, it can be concluded that while many respondents see the need for early intervention, they may not understand why this is necessary due to the misconceptions that they have about dyslexia. Therefore, the survey results

supported the need to increase the public's awareness on dyslexia and the benefits of early intervention.

Survey Limitations

Several limitations to the survey included the inherent drawbacks of the sampling method chosen and a limited sample size.

The survey was performed based on convenience sampling where the survey was only extended to those within one social sphere. This could lead to a bias in the results as the demographics of the people in this social circle can be rather similar. Therefore, some groups of people might be over-represented while others are left under- represented. This could also pose a difficulty when drawing generalised conclusions because there may be low transferability of the results to the general population of Singapore.

Additionally, it was not possible to establish a correlation between the various educational levels and age groups with the level of awareness. This was because a majority of the respondents had similar demographics. 58.2% of them fall within the ages of 18 to 25 and 77.6% possessing the educational level of diploma and above. Moreover, as the sample size was only 67, it might not be a full representation of the Singaporean public. These factors could limit the accuracy of the survey results.

Overall Findings

Through this primary and secondary research, two main reasons have been identified for a lack of early intervention in Singapore. Firstly, there is an ongoing lack of understanding of dyslexia and an existing stigmatisation towards seeking treatment for dyslexia. Secondly, the diagnosis of dyslexia is a complex and time-consuming process that can cost a significant amount of money.

Therefore, parents and teachers should be targeted, who are in the best position to seek the necessary help for a child. It should also be possible to reduce the time taken for screening and diagnosis and make it more convenient for children with dyslexia and their parents to seek help.

Recommended Solutions

Raising Awareness and Removing Stigma

From the interview with DAS, it was learnt that they hold roadshows in public office spaces. While these roadshows might be able to capture the attention of the public,

they are not targeted at the teachers and educators that need to be reached out to as they might not be in the vicinity of these roadshows. Hence, article proposes conducting a roadshow at a more convenient location, such as a local neighbourhood school, so as to get more parents and teachers involved. This should be held during a weekend before the June holidays, since this is usually the time when parent-teacher meetings are conducted. Therefore, parents will be more inclined to attend the event after hearing about the concerns that the teachers might have about their children.

For this roadshow, a few primary schools in a specific neighbourhood could collaborate with DAS to organise the event. The following booths should be featured at the roadshow:

- A general booth for the public to find out more about dyslexia. This booth will educate the public on what dyslexia is and how dyslexia can be identified and treated.
- A booth to inform parents of children with dyslexia of the programmes and subsidy schemes offered by DAS.
- A booth for non-dyslexic children where they get to experience dyslexia via a virtual reality simulation. This booth will help them empathise with their peers who have dyslexia.

By organising an interactive event that informs people further about dyslexia, it is believed that this roadshow can reduce the stigma attached to dyslexia and increase the knowledge that the parents and teachers have of this condition. The information booth on the programmes and subsidies offered by DAS would also reduce a parent's hesitance to enrol their dyslexic children at DAS due to financial constraints.

However, as this roadshow will require several primary schools in the neighbourhood and DAS to work together, planning will be difficult as a high level of collaboration would be required. Moreover, as awareness is intangible, it would be difficult to measure the success of the event. This solution has a long-term goal and it will take time to see the effects of the roadshow. As attendance for this event is on a voluntary basis, the number of people that it reaches out to might be limited.

Improving the Process of Diagnosis

75% of the total cost of treatment goes into screening and diagnostic tests (Roijen, 2011). Additionally, it has been established earlier that the process of diagnosis is

long and complex. As a result, this suggests that it deters parents from getting their child tested for Dyslexia. Hence, it would be useful to collaborate with DAS to create a mobile application (DASapp) to tackle the issue of cost and to make the process more convenient.

This mobile application would consist of multiple functions to cater to the different issues faced by children with dyslexia, their parents and educators.

On the go - Online Assessment

A digitalised version of the pre-diagnostic test would be used to assess the individual's reading, writing, listening and comprehension skills (Appendix D). A computer generated result will inform the user of his risk of dyslexia and better enable the user to consider whether further steps for intervention are required. The results can be sent to DAS for further assessment, subject to the user's approval. The user will then be contacted by DAS should his result warrant further assessment. This digitalised version would allow the assessment to be conducted in a more convenient and efficient manner when compared to a physical assessment.

Learner's Profile - Assessment Result

This application would generate a learner's profile if the child is found to be at risk of dyslexia (Appendix E). This could be accessed by the 3 key stakeholders: parents, educators and psychologists from DAS. Results from the assessments and their academic performance at school can be uploaded. These results can then be evaluated by the psychologist, subject to approval of the user. It could also act as a platform of communication, facilitating discussion about the progress of the child.

Event Updates

Linked to the solution of raising awareness, this application would update users on the latest happenings and events organised by DAS (Appendix F). This feature would also inform parents about the new and existing grants and subsidies that they may be eligible for.

Advantages

The digital solution would help to greatly reduce the time and cost required in the conventional process of screening and diagnosing dyslexia. It would also help to promote collaboration between parents and teachers to closely check on the child's progress. It would also serve as a convenient way to seek an expert's advice on the condition.

Additionally, as parents might hesitate to go to clinics to seek intervention due to the stigma associated with dyslexia, the application could help combat this by allowing them to conduct the initial assessments at home. This can promote the rate of early intervention.

LIMITATIONS

There would be a reduction in the accuracy of the assessment because the digital means of assessment would be limited in its scope compared to one conducted physically. Only part of the assessment could be conducted online and parents and children would still need to go down to the centre for completing the assessment.

Parents might be reluctant to use the application as they may feel that it is difficult to operate, or they may have concerns about the accuracy of the assessment being conducted. Thus, partnering with and getting endorsed by DAS would be important as this will make the application more credible.

CASE STUDIES

Recently, there have been many companies that have emerged that provides internet healthcare platforms. These platforms offer services such as online consultation, hospital referral and appointment, inpatient arrangement, and second opinion services. Such companies include Ping An Healthcare and Technology Company, Doctor on Demand and Teladoc. The idea of this platform is to allow better access to doctors, better communication with medical providers and greater personalization of care to meet the individuals at a lower cost. It also serves to reduce the waiting time in clinics for a patient to get a consultation. DASapp aims to mimic the benefits of such platforms.

CONCLUSIONS

In summary, the different ways of addressing the low rate of early intervention of dyslexia in Singapore were considered. Based on this primary and secondary research, dyslexia is a learning disability that affects a significant proportion of the Singapore population. The impact of dyslexia is not limited to the individual, but extends to society as a whole. Through this report, it is hoped to reduce the costs of diagnosing a child and the hefty costs to society of ensuring a more conducive and inclusive environment for individuals with dyslexia.

Currently the rate of early intervention for dyslexia in Singapore is low. This can be attributed to a lack of awareness about dyslexia, stigma attached to the condition, and the complex diagnostic procedures as well as the high costs of treatment. To

overcome these issues, an annual roadshow and a mobile application were proposed.

As an African proverb goes: "It takes a village to raise a child". To help a child with dyslexia effectively, everyone has a role to play in reducing the stigma attached to the condition. Parents and teachers, in particular, play an important role in assessing a child's progress and determining when a child needs help. Early intervention will ensure that a child masters the necessary literacy skills. This could go a long way in improving the life of the individual as well as in reducing the costs to society.

REFERENCES

- Bernhardt, B., & Major, E. (2005). Speech, language and literacy skills 3 years later: a followup study of early phonological and metaphonological intervention. International *Journal of Language & Communication Disorders, 40*(1), 1–27.
- Brock, S. E., Davis, J., & Christo, C. (2009). Identifying, *Assessing, and Treating Dyslexia at School.* Springer US. https://doi.org/10.1007/978-0-387-88600-8
- Chan, L. (2016, June 11). More dyslexia students seeking support to learn mother tongue: Dyslexia Association. Channel News Asia. Retrieved from https://www.channelnewsasia.com/news/singapore/more-dyslexia-students- seeking-support-to-learn-mother-tongue-dy-7993326
- Department of Statistics Singapore. (n.d.). *Births and Fertility. Department of Statistics Singapore.* Retrieved from https://www.singstat.gov.sg/find- data/search-by-theme/population/births-and-fertility/latest-data
- Digest of Education Statistics. (2013). Retrieved from https://nces.ed.gov/programs/digest/d13/tables/dt13_204.30.asp
- Dyslexia Association of Singapore. (n.d.). *All Programme Fees*. Retrieved from https://www.das.org.sg/services/about-our-services/all-programme-fees.html
- Dyslexia Association of Singapore. (n.d.). *DAS Handbook 2016*. Retrieved from https://www.das.org.sq/images/publications/das-handbook/dashb2016/DASHB2016-MAP.pdf
- Dyslexia Association of Singapore. (n.d.). *DAS Handbook 2018*. Retrieved from https://das.org.sg/images/publications/das-handbook/dashb2018/DAS_Handbook_2018-web.pdf
- Dyslexia Association of Singapore. (n.d.). *Dyslexia Screening*. Retrieved from https://www.das.org.sg/services/outreach-and-awareness/dyslexia-screening.html
- Dyslexia Association of Singapore. (n.d.). *Main Literacy Programme*. Retrieved from https://www.das.org.sq/services/programmes/main-literacy-programme.html
- Dyslexia Association of Singapore. (n.d.). *SpLD Assessment Services*. Retrieved from https://www.das.org.sq/services/about-our-services/spld-assessment-services.html
- Dyslexia Association of Singapore. (n.d.). *What is Dyslexia*. Retrieved from https://www.das.org.sg/about-dyslexia/what-is-dyslexia/what-is-dyslexia.html
- Dyslexia International. (2014). *DI-Duke-Report-final-4-29-14.pdf*.. Retrieved from https://www.dyslexia-international.org/wp-content/uploads/2016/04/DI-Duke-Report-final-4-29-14.pdf

- Dyslexia International. (n.d.) *The Problem.* Retrieved March 21, 2019, from https://www.dyslexia-international.org/the-problem/
- Ferrer, E., et al. (2015, November). Achievement Gap in Reading Is Present as Early as First Grade and Persists through Adolescence. *The Journal of Pediatrics*. Retrieved fromhttps://www.jpeds.com/article/S0022-3476(15)00823-9/pdf
- Gentry, J. R. (2014, April 8). Are More Boys than Girls Dyslexic? *Psychology Today*. Retrieved from https://www.psychologytoday.com/intl/blog/raising-readers-writers-and-spellers/201404/are-more-boys-girls-dyslexic
- Hellendoorn, J., & Ruijssenaars, W. (2000). Personal experiences and adjustment of Dutch adults with dyslexia. *Remedial and Special Education, 21*(4), 227–239. Retrieved March 20, 2019, from https://doiorg.libproxy.smu.edu.sg/10.1177/074193250002100405
- Ingesson, S. G. (2007, December 1). Growing Up with Dyslexia: Interviews with Teenagers and Young Adults. *School Psychology International, 28,* 574-591. Retreived from https://journals.sagepub.com/doi/10.1177/0143034307085659
- Kids Testing and Dyslexia Centre. (n.d.). Retrieved March 20, 2019, from http://www.kidsdyslexia.com.sg/index.htm
- Kirk, J., & Reid, G. (n.d.). An examination of the relationship between dyslexia and offending in young people and the implications for the training system. *Dyslexia* (10769242), 7(2), 77–84. Retrieved March 20, 2019, from https://doi- org.libproxy.smu.edu.sg/10.1002/ dys.184
- KPMG Foundation. (2006). The long term costs of literacy difficulties. KPMG Foundation.
 Retrieved from https://www.dyslexia-international.org/wp- content/uploads/2014/08/
 KPMG ecr costs-2006.pdf
- Lee, S. (2016, March 5). S'pore still at the tip of the iceberg in dyslexia awareness. TODAY. Retrieved from https://www.todayonline.com/voices/spore-still-tip- iceberg-dyslexia-awareness
- Lee, S. (2017, June 20). Local study shows dyslexic children at higher risk of developing social -emotional problems. The Straits Times. Retrieved from https://www.straitstimes.com/singapore/education/dyslexic-children-at-higher- risk-of-developing-social-emotional-problems-moe
- MSL Center. (n.d.). Home. Retrieved from http://www.msl-orton.com/
- Macdonald, S. J., Deacon, L., & Merchant, J. (2016). 'Too Far Gone': Dyslexia, Homelessness and Pathways into Drug Use and Dependency. *Insights into Learning Disabilities 13*(2), 117-134,
- May, H., Sirinides, P., Gray, A., & Goldsworthy, H. (2016). Evidence for Early Literacy Intervention: The Impacts of Reading Recovery (PR-15-5) Center for Research in Policy and Education, Philadelphia, PA. Retrieved from http://www.cpre.org/sites/default/files/cpre_readingrecover_pb_2016_nov2016.pdf
- Ministry of Education. (n.d.). *Learning Support.* Retrieved from Ministry of Education: https://www.moe.gov.sg/education/programmes/learning-support
- Ministry of Education. (n.d.). *List of SPED Schools*. Retrieved from https://www.moe.gov.sg/education/special-education/special-education-schools/list-of-sped-schools
- Ministry of Education. (n.d.) *Provision and support in mainstream schools.* Retrieved from https://www.moe.gov.sg/education/special-education/mainstream-schools
- Motamedi, B. (2019, January 01). Dyslexia, Ages 3 to 6. Health Day. Retrieved from https://

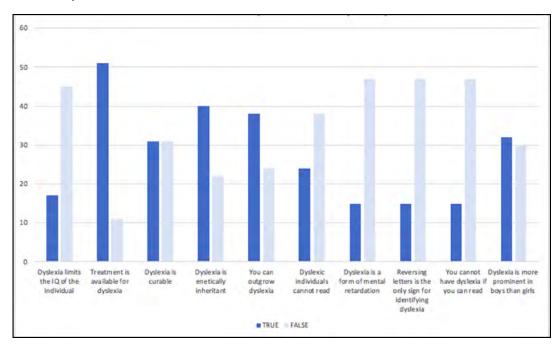
- consumer.healthday.com/encyclopedia/children-s-health-10/kids- ailments-health-news-434/dyslexia-ages-3-to-6-646620.html
- National Council for Special Education. (n.d.). *Identifying learning difficulties arising from Dyslexia*. Retrieved https://www.sess.ie/dyslexia-section/identifying-learning-difficulties-arising-dyslexia
- National University Hospital. (n.d.). *Dyslexia*. Retrieved from https://www.nuh.com.sg/ktp-nucmi/health/diseases-and-conditions/learning- and-behavioural-problems/dyslexia.html
- Noland, T. (2018, December 31). How Early Intervention with Dyslexia Benefits Your Students and Your School. Retrieved from https://home.edweb.net/early-intervention-with-dyslexia-benefits-students-school/
- Rack, J. (2005). *The Incidence of Hidden Disabilities in the Prison Population*, Egham, Surrey: Dyslexia Institute. Retrieved from https://www.scribd.com/document/307321467/The-Incidence-of-Hidden- Disabilities-in-the-Prison-Population-UK-2005
- Ram, G. S., Lim, L., Nair, S., Tan Abdullah, S., Salim, N. A. B., & Wee, R. (2016). MOE- aided DAS Literacy Programme (MAP). *DAS Handbook 2016.* pg 19-74. Retrieved from https://www.das.org.sg/images/publications/das-handbook/dashb2016/DASHANDBOOK2016-WEB.pdf
- Roijen, L. H., Goettsch, W. G., Ekkebus, M., Gerretsen, P., & Stolk, E. A. (2011). The Cost-Effectiveness of an Intensive Treatment Protocol for Severe Dyslexia in Children. Dyslexia, 17(3), 256-267. doi:10.1002/dys.436
- Salinger, R. L. (2016). Selecting Universal Screening Measures to Identify Students at Risk Academically. Intervention in School & Clinic, 52(2), 77–84. https://eric.ed.gov/?id=EJ1116192
- Samsudin, N. A. (2018, May 3). Number of dyslexia cases probably higher than reported. The Straits Times. Retrieved from: https://www.straitstimes.com/forum/letters-on-the-web/number-of-dyslexia-cases-probably-higher-than-reported
- See, J. S., & Koay, P. (2014). The identification of Dyslexia in Pre-school Children in a Multilingual Society. Asia Pacific Journal of Developmental Differences, 44-61.
- SG Enable. (n.d.). Early Intervention Programme for Infants & Children (EIPIC) and Development Support Plus (DS-Plus) | SG Enable. Retrieved October 21, 2019, from https://www.sgenable.sg/Pages/content.aspx?path=/for-children/early-intervention-programme-for-infants-children-eipic/
- Sim, T., Wong, K., Samsudin, N. A., & Bunn, T. (2015). Effectiveness of an Early Intervention Programme for Pre-School Children at Risk of Dyslexia in Singapore. DAS HANDBOOK 2015. Singapore: Dyslexia Association of Singapore.
- The Dyslexia Institute. (2015, March). The Incidence of Hidden Disabilities in The Prison Population. Yorkshire and Humberside Research. Retrieved March 20, 2019, from http://www.alippe.eu/documents/HiddenDisabilities.pdf
- Therapy Alliance. (n.d.). Dyslexia Test Singapore | Ascertain Reading Problems. Retrieved March 20, 2019, from https://www.therapyalliance.com.sg/dyslexia-test/
- Toh, L. (2018, March 27). Support programmes available for small groups of students with dyslexia. Retrieved from https://www.todayonline.com/voices/support-programmes-available-small- groups-students-dyslexia
- Torgesen, J. K. (2001). The theory and practice of intervention: Comparing outcomes from prevention and remediation studies. In A. J. Fawcett (Ed) Dyslexia: Theory and good

- practice. London: Whurr.
- U.S. Department of Education. (2006). Assistance to States for the education of children with disabilities and pre-school grants for children with disabilities; Final rule. Retrieved from http://idea.ed.gov/download/finalregulations.pdf
- Walmsley, B. (2012). House of Lords. Hansard Lords, 28 Jun, Column 385.
- Wong, K. (2015). Specialised Education Services Pre-school Early Intervention Programme .

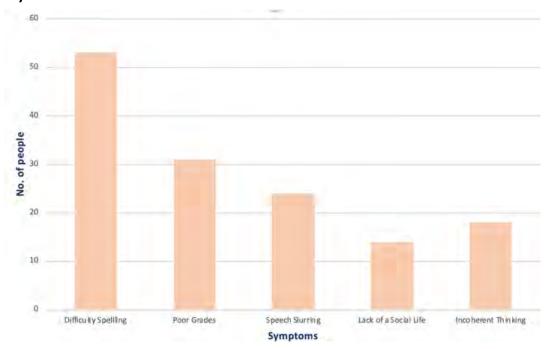
 Retrieved from https://www.das.org.sg/images/publications/das-handbook/
 dashb2015ei/DASHB2015El-3sespreschool.pdf
- Wong , K., & Sathiasilan, S. (2018, January). Evaluating an early literacy intervention in Singapore. Retrieved from https://www.das.org.sg/images/publications/apjdd/apjddjan2018/3_Evaluating_an_early_literacy_intervention_in_Singapore.pdf

APPENDICES

Appendix A: Chart representing the results from the True/False section (Block 2) of the survey.



APPENDIX B: Graph of the number of people against symptoms of Dyslexia (Block 3) showing the public's understanding of the possible symptoms of dyslexia.



APPENDIX C: Sign Up and Menu Features





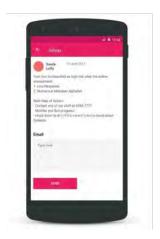


APPENDIX D: On the Go, Online Assessment Feature





APPENDIX E: Learner's Profile, Assessment Result Feature





APPENDIX F: Event Alert Feature







APPENDIX G: Roadshow Awareness Booth



APPENDIX H:
Awareness Booth for Information

APPENDIX I: Simulation Booth for Experience





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INTERNATIONAL PERSPECTIVES



Revisiting the Cerebellar Deficit Hypothesis: New Independent Evidence from Alvarez & Fiez, 2018.

Emeritus Professor Angela Fawcett

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For many years, the research conducted by my colleague Rod Nicolson and myself has puzzled many others in the dyslexia research community. For some years, we were known as the 'heretics of dyslexia research' Researchers have wondered why we concentrate on learning rather than reading, when everyone knows that dyslexia is primarily a literacy problem.

In many ways, we understood their bafflement, while arguing that reading has to be learnt just like any other skill. Most puzzling of all for many of them was our work on balance, automaticity and the role of cerebellum. Of course, many parents and

practitioners recognised the broad range of difficulties we identified in dyslexia, that seemed to extend through language and beyond. Since that time, over the last 20 years or more, there has been a developing interest in the role of the cerebellum, not only in cognition but also in emotion. Moreover, Pernet et al., 2009 identified the right cerebellum as the best biomarker for dyslexia. Given that our research is now quite old, why should it feature in an article on recent research?

This year, striking new research has revealed for the first time the mechanism by which the cerebellum

"striking new research has revealed for the first time the mechanism by which the cerebellum could contribute to dyslexia and learning."

could contribute to dyslexia and learning. This resolves the debate on whether the cerebellum is implicated in dyslexia and this led me to propose this article to help readers of Contact understand how the system works.

Let me fill you in on the background to our research. As parent of a dyslexic boy, I was privileged to have first-hand knowledge of the differences in his processing. But as a researcher, our main task is to establish the generality of any difficulties that we have noticed in dyslexia.

At the start of my PhD I undertook a comprehensive analysis of literacy in my group of dyslexic children in comparison with controls. I found that even those dyslexic children who appeared to have caught up with their reading, such as my son Matthew, processed very differently from their age matched peers, and this could not simply be explained in terms of their language. This puzzled me, and I became convinced that successful dyslexic children were relying on their compensatory skills, even in areas where they seemed relatively proficient. This meant that their performance was likely to remain slow and effortful, impacting on their further learning. I was lucky enough at this stage to change supervisor to start working with Rod Nicolson who had a lifetime interest in learning. This led to my PhD research in which I challenged the basic skills of balance in my group of dyslexic adolescents, by adding a secondary task of counting, adjusted for each child to their level of proficiency in counting. If your balance is automatic, this should have no effect on your performance, and sure enough this was the pattern we found for our nondyslexic controls. By contrast our dyslexic group had difficulty in both balancing and counting, when asked to perform a dual task. This confirmed our theory that dyslexic children were not automatic or expert in any task and that they achieved normal performance in the range of non-literacy based tasks mainly by conscious compensation (Nicolson and Fawcett, 1990). We went onto replicate these results with a range of different tasks in several different age groups of dyslexics and controls. Future research from colleagues in dyslexia research has confirmed around 50% of dyslexic children display this pattern of difficulties. While not necessarily important in terms of learning to read, this research provided a pointer towards early screening to identify a range of difficulties that could be identified before a child fails at school, leading to our early screening tests published by Pearson education.

At this stage, our colleague Paul Dean drew our attention to the cerebellum, a part of the brain known to be implicated in balance, but more recently acknowledged to facilitate language dexterity through its links with the main language area, Broca's area. This led us to propose that the cerebellum could be a cause of the problems in learning we had identified in our dyslexic panel (Nicolson, Fawcett and Dean, 2001). We undertook a range of studies to test this, including measures known to

identify problems in cerebellar patients, and found unexpected difficulties at a similar level to those in reading and phonology in our panels of dyslexic children (Fawcett, Nicolson and Dean, 1996). These difficulties could not be accounted for by any of the other major theories of dyslexia. We went on to run a PET study of Brain functioning in dyslexic adults and controls, while learning a Motor skill task. Our results showed significant differences in processing for the dyslexic group, with only 10% of the activation in the cerebellum found in the controls. By contrast our dyslexic group showed heightened activation in the frontal cortex, suggesting they were still processing tasks that should be learned (Nicolson et al., 1999). We followed this up with a study of the anatomy of dyslexic brains, based on cell counts drawn from the Orton brain bank, which showed differences based on larger cells in the cerebellum of the dyslexics than in controls (Finch et al., 2002).

More recently, we have proposed the procedural learning deficit hypothesis as a mechanism for the difficulties dyslexics experience, which would be evident in problems in learning material that must be sequenced, by contrast with declarative knowledge or facts, which may well be a strength in dyslexia (Nicolson and Fawcett, 2007). We have always acknowledged that further neuroanatomical evidence is needed to directly link dyslexia to the cerebellum.

A recent study from Alvarez and Fiez (2018) in Pittsburgh has fully addressed this challenge. Interestingly, these authors have recognised the strengths of our hypotheses, linking together indirect processes of articulation and phonology with skill automatisation. They argue that 'an important strength' of our theoretical base is the integration of new conceptions on the role of the cerebellum with cortical systems known to be involved in reading. These authors propose that neuroimaging studies of cerebellar function, structure and connectivity provide support for these links. Citing the consensus paper on the cerebellum, by Marien in 2014, to which we contributed the section on dyslexia, they note the need to clarify the underlying mechanisms using shared datasets and software that can run a meta-analysis to identify common themes in the literature, proving both quantitative and qualitative evidence.

The authors set out to achieve this by examining the connectivity between key areas in the brain associated with reading in the left hemisphere and their connections with the cerebellum, identifying 14 areas that map onto phonology. Checking for connections to the cerebellum, the authors found 3 regions that linked to the right cerebellum. Using word association technology, they found that region1 (the inferior parietal lobe-IPL) linked to phonology and working memory in the cerebellum, whereas region 2 (the inferior frontal junction-IFJ) linked from semantic aspects of reading in the cortex to semantic memory and updating in the cerebellum. Finally, region 3 (Middle Temporal Gyrus-MTG) linked to orthography, which is implicated in

recognising nonsense words. A consistent finding across the regions of these circuits was the common term phonology.

In terms of known mechanisms of reading, the fronto-parietal pathway (IPL) is linked to phonology in recognising rhymes, and linking graphemes with phonemes and the IFJ in tongue movements and articulation for inner speech in reading. Children with dyslexia have been shown to lack the connectivity needed for orthographic processing, which plays a role in processing print visually. The cerebellum contributes to reading via phonology and articulation, and provides the fine tuning needed for fluent and accurate processing. Here, Alvarez and Fiez suggest that fluent articulation and automatisation may be intertwined in decoding. They also note that the interconnections between the different pathways here may fine tune selective attention to aspects related to reading, with the timing functions of the cerebellum drawing together sequencing and organisation of visual and articulatory codes. This links the recognition of the grapheme or word, with the ability to name the phoneme or read the word. It seems that this explanation may tie together the different components of reading into a comprehensive whole. Their findings suggest that the cerebellum may play a compensatory role in reading in dyslexia. Moreover, they note that the orthographic route allows readers to pronounce unfamiliar words by comparison with known vocabulary. Finally, they propose that the semantic route they have identified linked to the cerebellum is involved in retrieving words. Links within these systems provide the mechanism for fluent reading.

I hope the readers will see why I have been so excited by this paper and determined to share it with as many people as possible. For the first time, the authors argue there is 'compelling evidence' for the role of the cerebellum in reading, for both dyslexic and normal readers. Moreover, they note that their findings provide support more specifically for a number of our theories, including our major theories of automatisation deficit, cerebellar deficit and procedural learning deficit, as well as our theories on conscious compensation, and articulation and inner speech. Of course, as with all research, there is no doubt that future research may modify and clarify aspects of these findings, and it is important to consider how dyslexia develops over time. As Alvarez and Fiez conclude, "Overall, multiple lines of research provide support for the cerebellar deficit hypothesis, while also highlighting the need for further research to test mechanistic hypotheses". Nevertheless, it is particularly rewarding to find, as I have always argued, that all the theorists are right and each theory can provide another exciting piece of the jigsaw of knowledge that underlies our deeper understanding of dyslexia.

REFERENCES

- Alvarez, T. A., & Fiez, J. A. (2018). Current Perspectives on the Cerebellum and reading development. *Neuroscience and Behavioural Reviews. 92*, 55-66.
- Fawcett, A. J., Nicolson, R. I., & Dean, P. (1996). Impaired performance of children with dyslexia on a range of cerebellar tasks. *Annals of Dyslexia*, 46, 259-283
- Finch, A. J., Nicolson, R. I., & Fawcett, A. J. (2002). Evidence for an anatomical difference within the cerebella of dyslexic brains. *Cortex, 38,* 529-539
- Mariën, P., Ackermann, H., Adamaszek, M., Carolina, H., Barwood, S., Beaton, A., Desmond, J., De Witte, E., Fawcett, A. J., Hertrich, I., Küper, M., Leggio, M., Marvel, C., Molinari, M., Murdoc, B. E., Nicolson, R. I., Schmahmann, J. D., Stoodley, C. J., Thürling, M., Timmann, D., & Ziegler, W. (2014). Consensus paper: Language and the cerebellum: an ongoing enigma. Cerebellum 13, 386-410
- Nicolson, R. I., & Fawcett, A. J. (1990). Automaticity: a new framework for dyslexia research. *Cognition, 30,* 159-182.
- Nicolson, R. I., & Fawcett, A. J. (2007). Procedural learning difficulties: reuniting the developmental disorders? Trends in Neurosciences, 30 (4), 135-141.
- Nicolson, R. I., Fawcett, A. J., Berry, E. L., Jenkins, I. H., Dean, P., & Brooks, D. J. (1999).

 Association of abnormal cerebellar activation with motor learning difficulties in dyslexic adults. *The Lancet, 353,* 1662-1667
- Nicolson, R. I., Fawcett, A. J., & Dean, P. (2001). Developmental dyslexia: the cerebellar deficit hypothesis, *Trends in Neurosciences*, *24*, 508-512
- Pernet, C. R., Poline, J. B., Demonet, J. F., & Rousselet, G. A. (2009). Brain classification reveals the right cerebellum as the best biomarker of dyslexia. *Bmc Neuroscience* 10.67

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